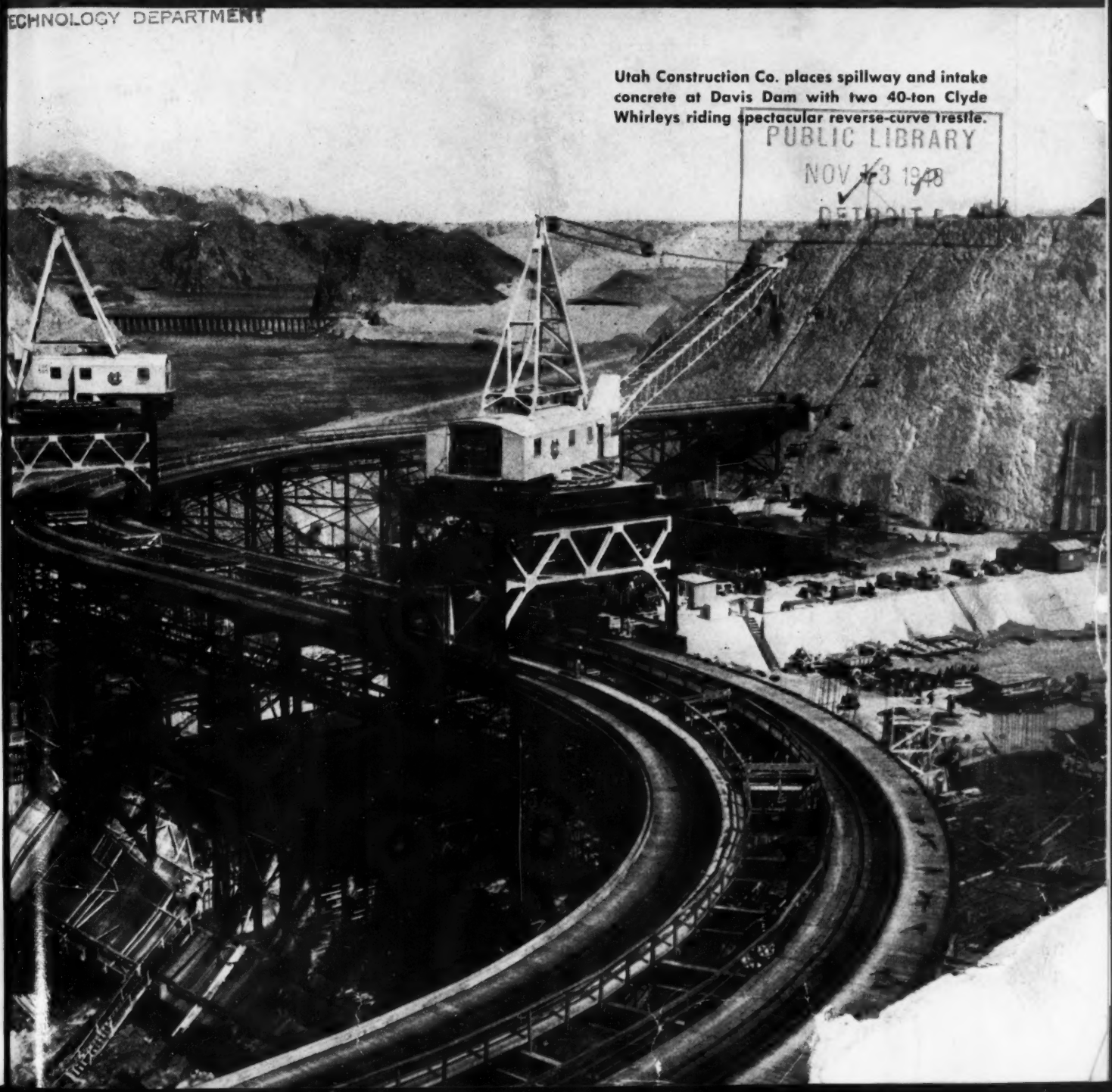
Construction Methods

NOVEMBER 1948

A McGRAW-HILL PUBLICATION

ECHNOLOGY DEPARTMENT



Utah Construction Co. places spillway and intake concrete at Davis Dam with two 40-ton Clyde Whirleys riding spectacular reverse-curve trestle.

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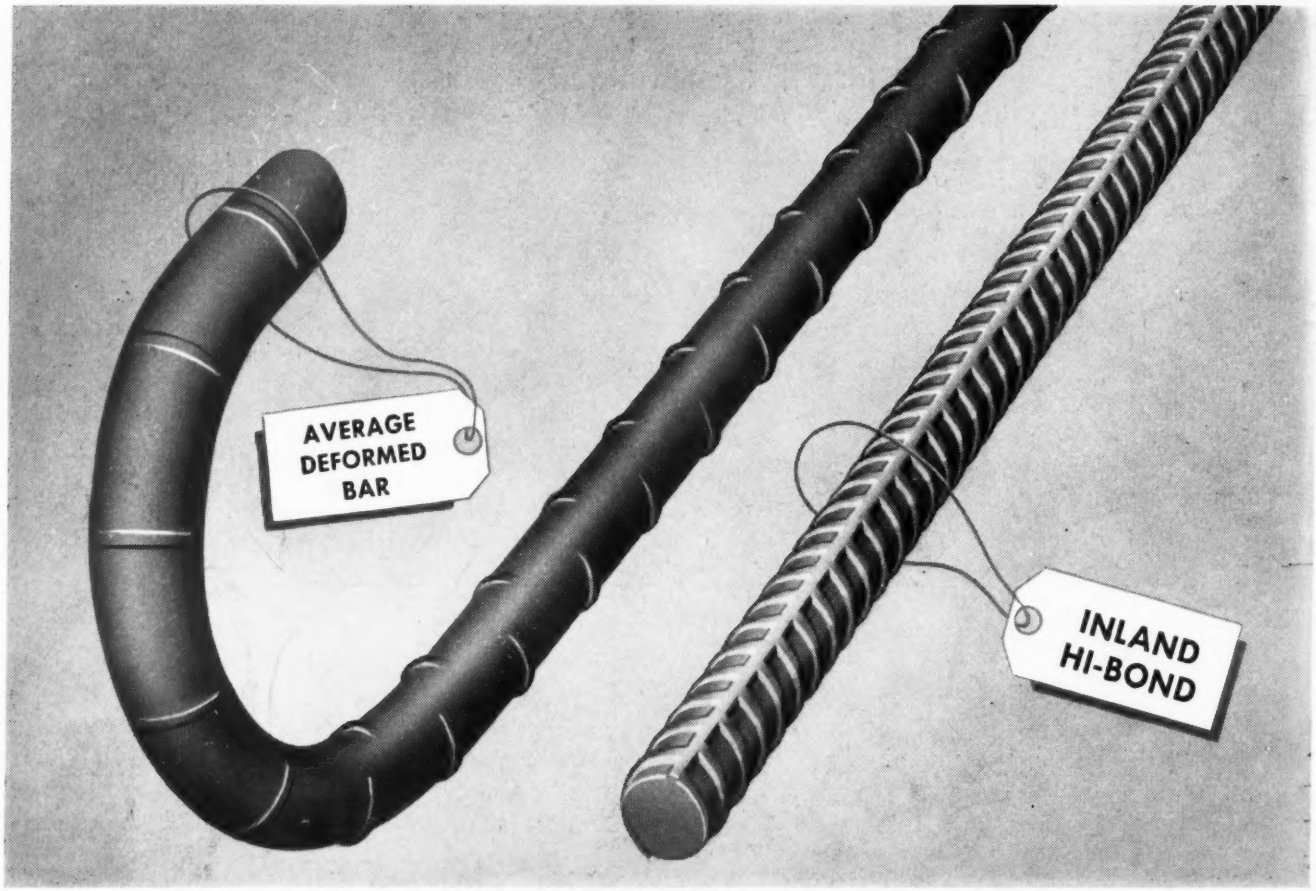


Which Provides Greater Anchorage?

Strange as it may seem, tests made by the National Bureau of Standards have definitely proved that a straight section of Inland Hi-Bond reinforcing bar provides greater anchorage than hook anchors made of ordinary deformed bars. That's why, with Hi-Bond, hook anchorage is unnecessary.

Hi-Bond's greater bonding strength is due to its deep, reversed, double-helical ribs. By preventing slipping, Hi-Bond makes it possible to use more of the potential strength of the steel and to take advantage of the higher compressive strength of present-day concrete. Thus, Hi-Bond provides more efficient and economical structures.

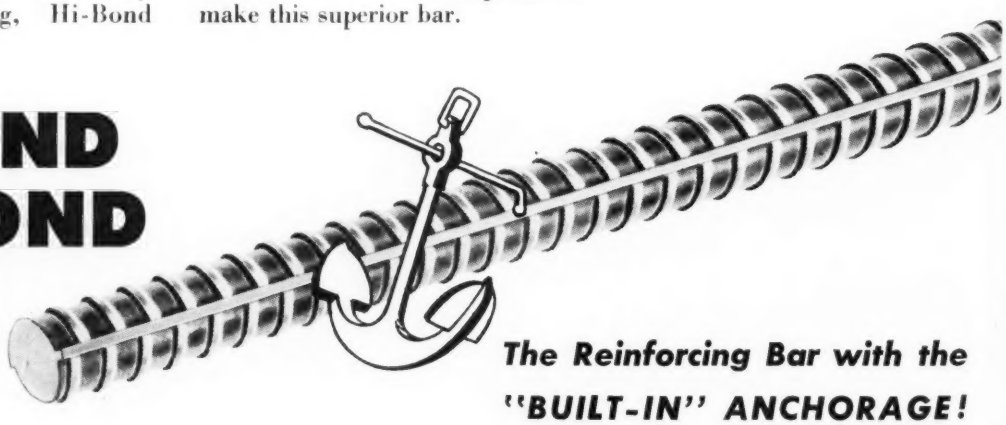
Unfortunately, the present demand for Hi-Bond greatly exceeds the supply. To make larger tonnages available to you, we have licensed other steel companies to make this superior bar.

Write for Booklet

INLAND STEEL CO.
38 S. Dearborn St., Chicago, Ill.

Sales Offices: Chicago, Davenport, Detroit, Indianapolis, Kansas City, Milwaukee, New York, St. Louis, St. Paul.

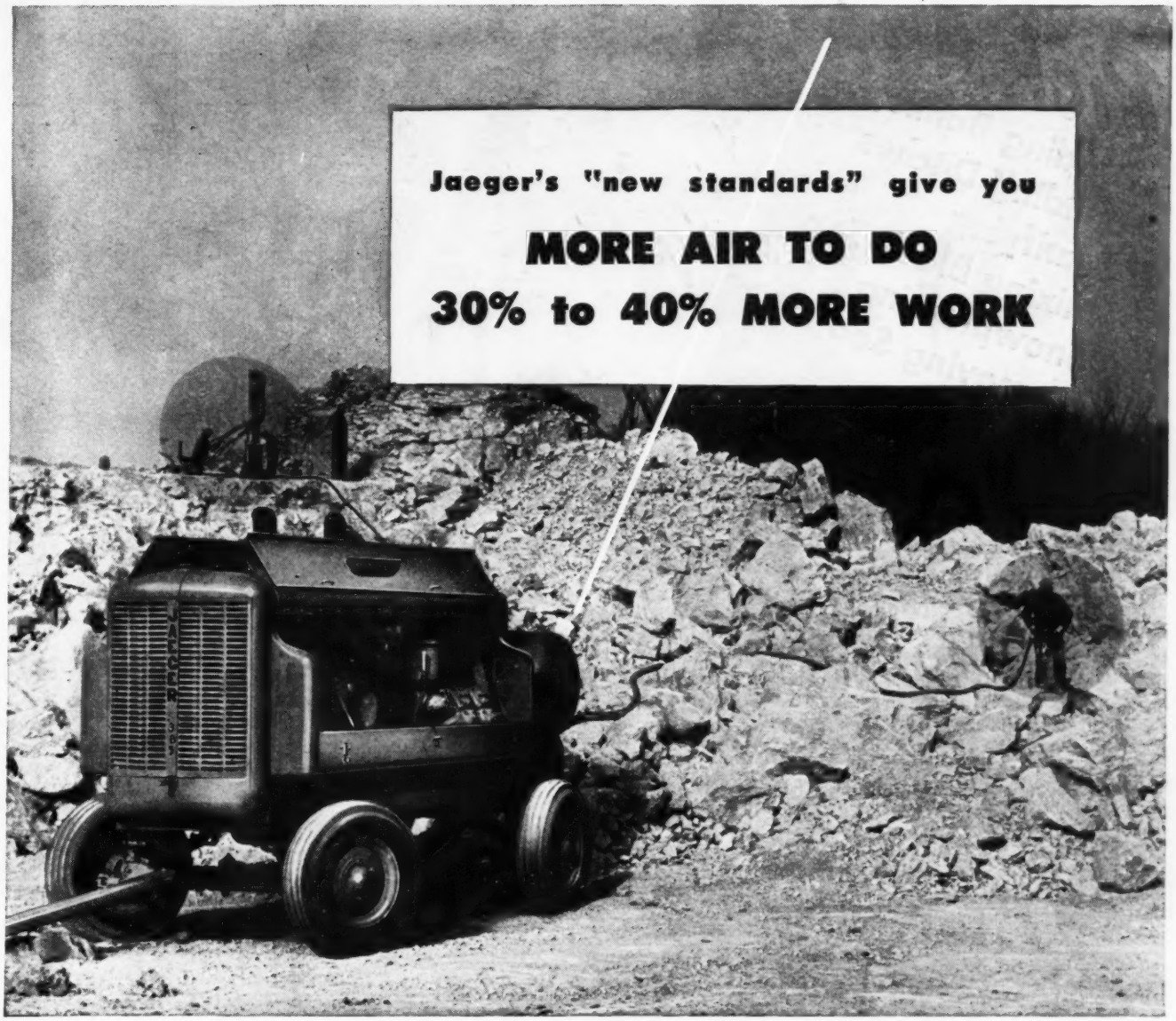
INLAND HI-BOND



INLAND STEEL

The Reinforcing Bar with the "BUILT-IN" ANCHORAGE!

STRUCTURALS • PLATES • SHEETS • STRIP • TIN PLATE • FLOOR PLATE • PILING • RAILS • TRACK ACCESSORIES



Example: "New standard" 365 ft. compressor will operate a heavy duty wagon drill plus a rock drill or heavy breaker at full 90 lbs. pressure — doing up to 40% more work than a 315 ft. unit which runs the same tools at a pressure of only 70 lbs.

Because "old standard" compressor ratings, established in 1932, do not match today's air tools and cannot operate these tools efficiently, Jaeger takes the lead in offering complete "new standard" sizes — 75 ft. of air instead of 60 — 125 ft. instead of 105 — 185 ft. instead of 160 — 250 ft. instead of 210 — 365 ft. instead of 315 — 600 ft. instead of 500.

This increased air maintains the steady 90 lbs. pressure at which tools reach their full drilling speed and hitting power, actually do 30% to 40% more work than the same tools under 70 lbs. pressure from undersized compressors.

Because Jaeger's "Fuel Miser" control automatically regulates engine speed to air demand, these units do not consume an ounce more fuel than the smaller "old standard" sizes when their *additional* capacity is not being used. For full details, see your Jaeger distributor or send for new Catalog JC-8.

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COMPRESSORS • DIAGONAL SCREED FINISHERS
SCREW SPREADERS • BITUMINOUS PAVERS

Pick Any Job

- Grading Banks
- Building Ditches
- Scarifying
- Mixing Black-Top
- Snowplowing
- Removing Sod

... THE

CAN

Takes Maintenance Work in Stride — cuts smoothly, to fractional inch accuracy . . . blade held firmly on work through direct down pressure. Highly maneuverable — ideal for operation in close going and on narrow roads and streets.

Easily Grades Banks — tears into heavy bank work . . . hugs slopes as it smooths — it is strong, stable, powerful, properly balanced.

Builds Ditches Quickly — leaning front wheels are set firmly against load . . . extra stability and flotation obtained with oversize front tires. No protruding hub caps to break off or hang up grader.

Scarifies, Mixes Black-top — you'll be surprised at the power and stability of the BD on this work . . . tears up tough material, turns over heavy windrows.

E NEW BD
N HANDLE 'EM ALL

The BD brings you big grader performance at medium grader economy! A 17,772 lb. machine with a 50.5 brake hp. diesel engine, it does a remarkable job on every job — pushes more dirt than you would ever believe possible. Easily handles high, heavy bank cuts or tough ditch work . . . it's a *motor grader* — through and through!

There's no *one* reason for its unusual earth-moving capacity and versatility . . . it's a combination of *all* features —

. . . the *right balance* between weight, speed and horsepower for greater stability, more traction and fast, accurate cutting.

. . . a "*roll-away*" *moldboard* that rolls instead of pushes material, requiring less power.

. . . *high clearance* at throat as well as axle that increases volume of material handled.

. . . tandem drive, direct down pressure of blade, full circle revolving blade, a full range of blade positions

. . . General Motors 2-Cycle Diesel Power, leaning front wheels, easier steering and convenient controls, full blade visibility — these and many other advantages all contribute to its outstanding performance.

Whatever the type of job . . . the BD Motor Grader can do it . . . at big savings to you. "Seeing Is Believing." Watch it perform at your first opportunity.

FULLY EQUIPPED, including electric starter and lights. Available with scarifier, cab and snowplow. Choice of standard or oversize front tires (9:00 or 12:00).

ALLIS-CHALMERS
TRACTOR DIVISION • MILWAUKEE 1, U. S. A.

SYNTRON

100% Self-Contained

Gasoline Hammer

PAVING BREAKERS

SAVE MONEY and TIME
BUSTING
CUTTING
DIGGING
TAMPING

and on a host of other jobs.

Write for illustrated folder

SYNTRON CO.

500 Lexington, Homer City, Pa.

Construction Methods

THE CONSTRUCTION MAGAZINE WITH PICTURE POWER

Established 1919

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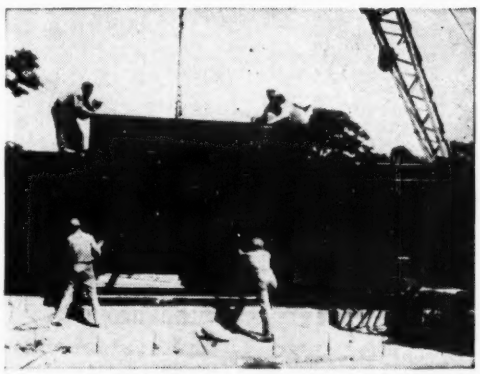
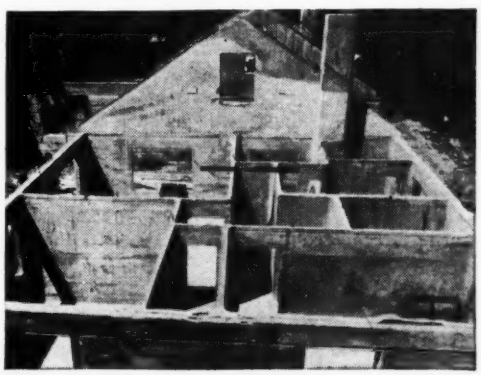
HIGH VALUE LOW COST HOUSING

MONOLITHIC CONCRETE HOMES BY ASSEMBLY-LINE METHODS





HERE is a milestone in home-building progress . . . well-designed, attractive homes, with walls and partitions cast in a durable concrete monolith . . . ultra-modern conveniences, even to radiant heating . . only 30 minutes from the heart of New York City . . . selling, and selling fast, for $11,900.

CALLAN BUILDERS, INC., of Manhasset, L. I., are building 150 of these concrete homes at Manhasset Isle, Port Washington, L. I. Through mechanized operation, using specially-designed, rugged steel forms, the frame is erected in less than 2 days—only 6 days to turn out a complete house! A crane places forms for the entire structure, complete even to screw holes for door hinges and other fittings. 'Incor'* 24-Hour Cement permits high-speed schedules and provides clean, smooth finished surfaces. Staunch 7-inch exterior walls have 3 inches of reinforced concrete on either side of a one-inch insulation panel — a thoroughly moisture-proof wall. A pleasing exterior is obtained by rustication. Exteriors are painted with permanent cement paint; wallpaper is applied directly to inside walls.

Americans have a sixth sense — the dollar-value sense. You can tell it by the way they "go" for these concrete homes. And why not? Because here is a house proof against fire, rot, sag, crack and time itself .. . modern construction at its soundest and best. *Reg. U.S. Pat. Off.

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'INCOR' HIGH EARLY STRENGTH PORTLAND CEMENT
"INCOR"
LONE STAR AIR-ENTRAINING PORTLAND CEMENT
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An Enthusiastic User Reports:

"THE TIP-TOP TRAILER IS ONE OF THE MOST USEFUL AND TIME-SAVING PIECES OF EQUIPMENT WE HAVE EVER OPERATED"

The above is a typical reaction of users who have tried and proven to their own satisfaction that TIP-TOP Trailers offer advantages possessed by no other trailer.

Designed on an entirely new principle, TIP-TOP cuts loading and unloading time to a matter of a few minutes. Yet the operation is both safer and easier, as all need for blocking, skidding and winching is eliminated.

In addition to their exclusive features, TIP-TOP Trailers have a wide range of general utility uses. Practically any type of material, such as lumber, steel, pipe, etc., can be hauled.

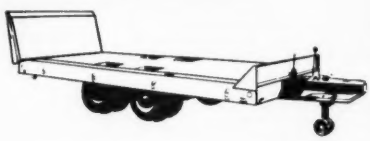
SPECIFICATIONS: Sturdily constructed with pressed steel frames, TIP-TOP Trailers are available in 7-ton capacity (single axle) and 12-ton capacity (tandem axle). A liberal factor of safety is provided for unavoidable overloads. Trailers are equipped with approved lights and reflectors, vacuum or air brakes and comply with all state laws.

INQUIRIES AS TO OPEN TERRITORIES ARE INVITED FROM QUALIFIED DISTRIBUTORS.

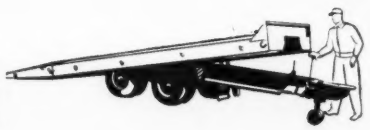
ARTHUR REHBERGER & SON, Inc.
320 Ferry Street Newark 5, N. J.
VEHICLE MANUFACTURERS FOR OVER SIXTY YEARS

TIP-TOP MAKE LOADING and UNLOADING AS SIMPLE AS THIS!

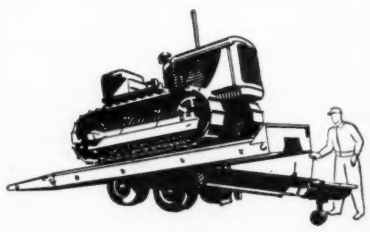
1. Trailer before loading.



2. Tail skid is lowered and loading platform is raised by hydraulically controlled, hand operated pump.

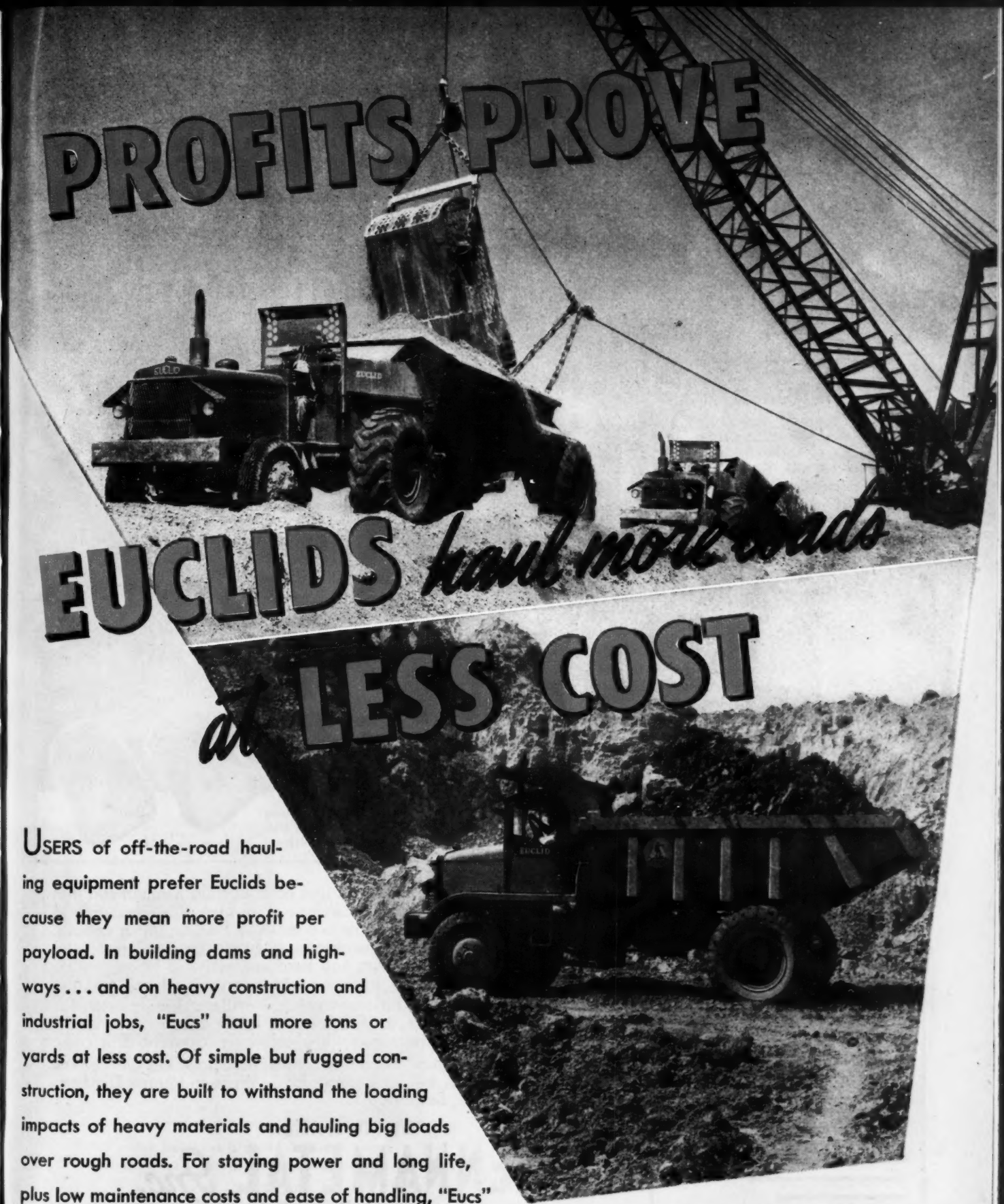


3. Equipment is driven on under its own power with tail skid serving as ramp. Release valve is then opened so that loading platform will return to its original position and automatically lock. The tail skid is then hydraulically raised to shorten overall vehicle length and to serve as barrier for load.
In unloading, same procedure is followed and equipment is driven off under its own power.



TIP-TOP TRAILERS
Patent Pending

For additional information on TIP-TOP Trailers, write for folder



USERS of off-the-road hauling equipment prefer Euclids because they mean more profit per payload. In building dams and highways . . . and on heavy construction and industrial jobs, "Eucs" haul more tons or yards at less cost. Of simple but rugged construction, they are built to withstand the loading impacts of heavy materials and hauling big loads over rough roads. For staying power and long life, plus low maintenance costs and ease of handling, "Eucs" are first choice of many leading contractors and industrials.

The EUCLID ROAD MACHINERY Co.
Cleveland 17, Ohio

EUCLIDS *Move the Earth*

Kennametal Rock Bits
Save Time, Cut Costs
DO THE JOB FASTER

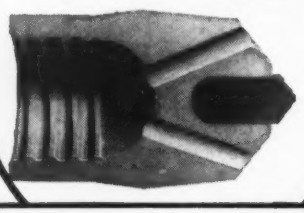
FEW BITS— FEW CHANGES

Kennametal Rock Bits have resistance to gage reduction 100 times greater than steel. Same size bit can be used on all drill rods. A full day's work frequently is done by the same bits on their respective drill rods.

DRILL FAR LONGER THAN STEEL BITS

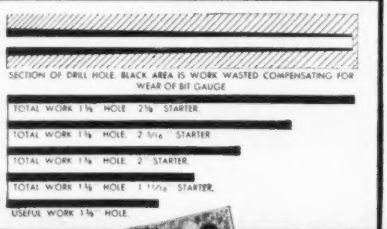
In Cambria County, Pa., 1 Kennametal rock bit outlasted 188 steel bits, and saved about $40.00 in bit cost alone. Drilling time for the footage was reduced from 1210 minutes to 308 minutes.

THIS IS THE DESIGN— COMPLETELY PROVED



The 2 Kennametal Rock Bits shown at right drilled as long on this job as 600 steel bits. Each bit drilled 1,500 feet, total of 3,000 feet, in black flint, shale, and sandstone!

Proof of Superiority of Single Gage Drilling with KENNAMETAL ROCK BITS


SECTION OF DRILL HOLE. BLACK AREA IS WORK WASTED COMPENSATING FOR WEAR OF BIT GAUGE
TOTAL WORK 1⅝" HOLE. 2⅜" STARTER.
TOTAL WORK 1⅝" HOLE. 2 5/16" STARTER.
TOTAL WORK 1⅝" HOLE. 2" STARTER.
TOTAL WORK 1⅝" HOLE. 1 11/16" STARTER.
USEFUL WORK 1⅝" HOLE.

Kennametal Rock Bits have a cutting edge of solid Kennametal that keeps gage loss to within thousandths of an inch. Its resistance to wear enables the bit to drill up to 4 times as fast, and drill smooth, uniform diameter holes in sandstone, granites, ganister, quartzite, limestones and other medium and hard materials.

Users of Kennametal Rock Bits report lower bit cost, better blasting effectiveness, far fewer bits used per foot drilled. Kennametal Bits can be used on sinkers, drifters, stopers, and wagon drills, without any conversion of equipment. They screw on standard drill rods.

For complete particulars on how Kennametal Rock Bits can reduce your drilling costs, ask for Bulletin RB-1. Write to Mining Division, Kennametal, Inc., Latrobe, Pa.

MINING DIVISION

KENNAMETAL® *Inc.*

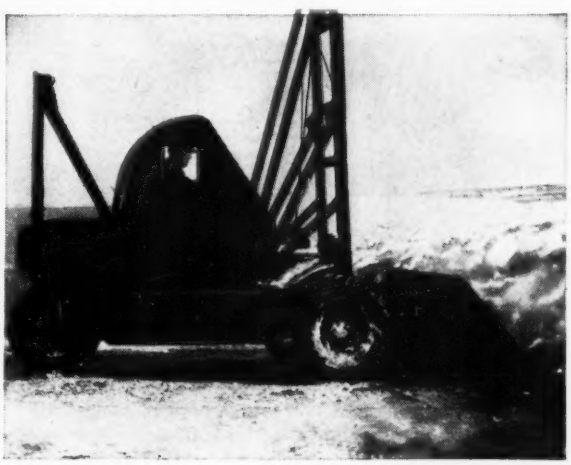
Latrobe, Pa., U. S. A.

THE WORLD'S LARGEST MANUFACTURER OF CEMENTED CARBIDE MINING TOOLS

Available in the following sizes:
1⅜ , 1½ , 1⅝ , 1¾ , 2 , 2¼

SNOW REMOVAL

IS EASIER WITH SCOOPMOBILE



Visibility from inside cab is good—windshield swipes are standard equipment, and heaters are available.

Scoopmobile, with a level bucket load capacity of 1.08 cubic yards, can easily scoop snow and load the average truck in two minutes. Cab model provides added comfort for the operator, resulting in greater efficiency, reduced man hours. Weight of the machine is centered over driving wheels (single or dual as desired) for *positive traction*. Dozer Blade and other attachments available.

Ask Your Nearest MIXERMOBILE Dealer Today!

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FOLDAWAY LIFT

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"Job-Rated" TO FIT THE JOB

Trucks that *fit your job* . . . save you money. They save in many ways.

They save on gas, oil, and tires. They save on upkeep and repairs. They stay on the job. They last longer.

For such a truck, see your Dodge dealer. Tell him what you haul . . . the weight of your load . . . and your operating conditions.

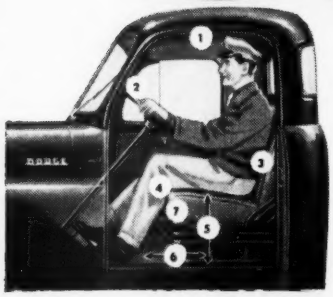
He will then recommend a Dodge *"Job-Rated"* truck that has been engineered and built to fit *your* job.

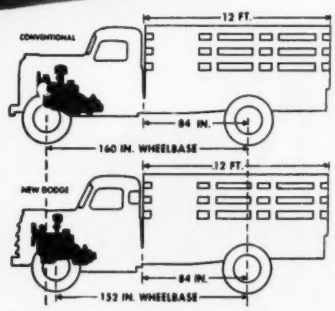
Your new truck will have *"Job-Rated"* power, for performance with economy.

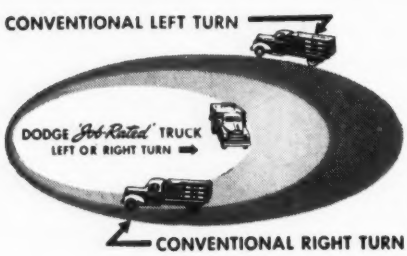
Every other unit . . . clutch, transmission, brakes, rear axle, springs and tires will be *"Job-Rated"* for long life and dependable operation.

For the location of the Dodge dealer in your community, consult the yellow pages of your telephone book.

PLUS... these important NEW features







SHORTER TURNING DIAMETERS

New Dodge *"Job-Rated"* trucks provide an entirely new ease of steering and handling. You can turn in much smaller circles, right and left, because of a new type of "cross-steering," plus shorter wheelbases and wider tread front axles.

MORE COMFORT AND SAFETY

1. Plenty of headroom. **2.** Steering wheel, right where you want it! **3.** Natural back support, adjustable for maximum comfort. **4.** Proper leg support. **5.** Chair-height seats. **6.** 7-inch seat adjustment, with convenient hand control. **7.** "Air-O-Ride" cushions, adjustable to weight of driver and road conditions.

BETTER WEIGHT DISTRIBUTION

New Dodge *"Job-Rated"* trucks have *much* better weight distribution. You can haul *more payload*. This has been achieved by moving the front axle back, *under* the frame, and moving the engine forward. More of the load is carried on the front axle. Wheelbases are shorter . . . but cab-to-rear-axle dimensions are unchanged.

DODGE "Job-Rated" TRUCKS

FIT THE JOB . . . LAST LONGER!

Visit the Big Dodge "Job-Rated" Truck and Equipment Show, Madison Square Garden, New York City, November 18-21, 1948

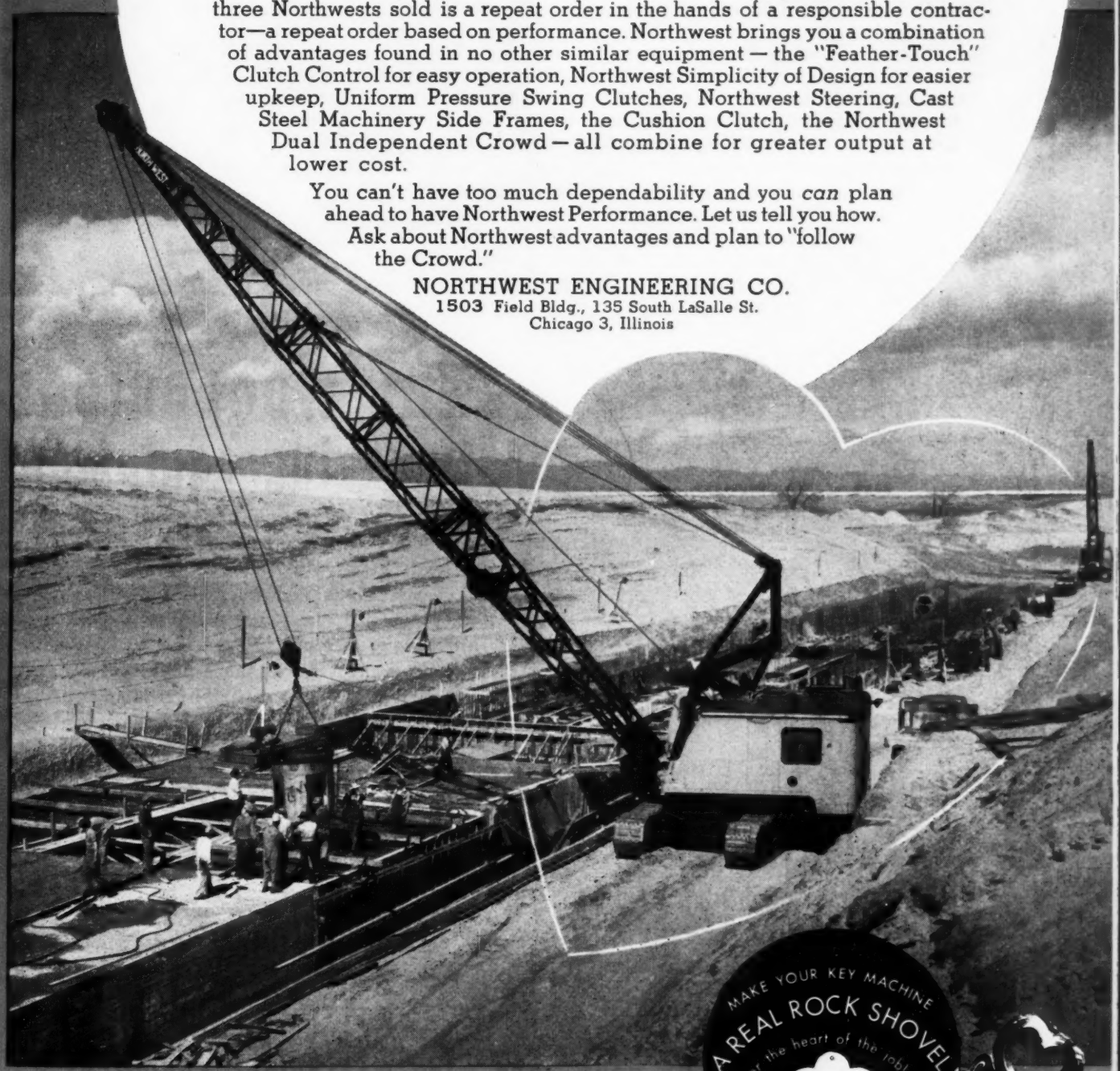
Keeping $1,000 an hour in investment BUSY!

Figure up what you have in investment, not in the machine itself, but in the job behind the machine that you put in a Key Spot like this. Is it $1,000 an hour? Is it $10,000 an hour? Perhaps it's more — or less! But, in any case, when you have high-priced labor, the operation of other costly equipment, the movement of necessary materials all depending on the continued, smooth performance of a Crane, Shovel, Dragline or Pullshovel at the heart of a job like this, *you can't afford to have anything but the best.*

You don't have to question Northwest performance. Remember, one out of every three Northwests sold is a repeat order in the hands of a responsible contractor—a repeat order based on performance. Northwest brings you a combination of advantages found in no other similar equipment — the "Feather-Touch" Clutch Control for easy operation, Northwest Simplicity of Design for easier upkeep, Uniform Pressure Swing Clutches, Northwest Steering, Cast Steel Machinery Side Frames, the Cushion Clutch, the Northwest Dual Independent Crowd — all combine for greater output at lower cost.

You can't have too much dependability and you *can* plan ahead to have Northwest Performance. Let us tell you how. Ask about Northwest advantages and plan to "follow the Crowd."

NORTHWEST ENGINEERING CO.
1503 Field Bldg., 135 South LaSalle St.
Chicago 3, Illinois

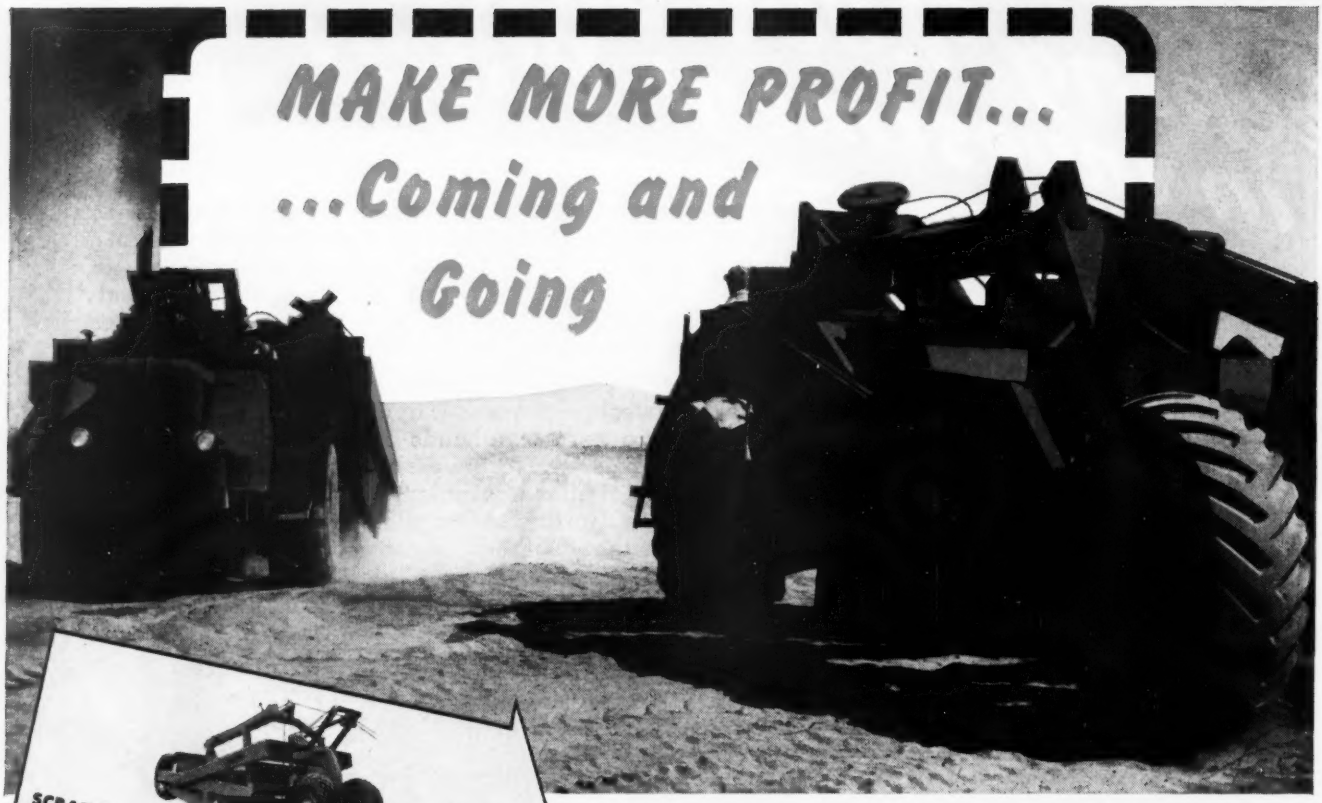


MAKE YOUR KEY MACHINE A REAL ROCK SHOVEL
For the heart of the job!
PROFIT

NORTHWEST

SHOVELS • CRANES • DRAGLINES • PULLSHOVELS

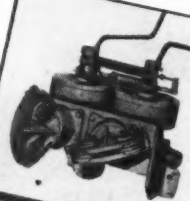
MAKE MORE PROFIT...
...Coming and Going



Above: 200 H.P. Terra-Cobras at work on U. S. Highway 666 near Cochise, Ariz.

SCRAPERS: *Boiling Bowl and Terra Clipper Scrapers from 7.5 to 27.5 cu. yd. heaped capacities.*

RIPPERS: *Three models: for extra heavy, standard, or light duty.*



POWER CONTROL UNITS: *Two-drum Winches for use with all standard tractors.*

...with WOOLDRIDGE earthmoving equipment

Regardless of the size of the job—the type of dirt or length of haul, you'll make more profit per yard with Wooldridge Equipment—and here's why: Wooldridge high-speed, self-propelled Terra-Cobras and tractor-drawn scrapers are built to load and dump heaping yardages faster—to travel and spread with greater balance and speed. What's more, Wooldridge equipment works more hours per shift with less down-time and yardage loss. And by reducing operator-fatigue with its resultant slowdowns and carelessness, Wooldridge equipment maintains consistent hourly averages throughout each entire shift. Join the trend of leading contractors—bid your jobs on Wooldridge's proved productive performance for more profit coming and going. Get full details today.

WOOLDRIDGE
MANUFACTURING COMPANY
SUNNYVALE, CALIFORNIA, U.S.A.

EARTH MOVING
EQUIPMENT

SEE YOUR NEAREST WOOLDRIDGE DEALER

GET THE MOST OUT OF YOUR JOBS WITH WOOLDRIDGE EQUIPMENT

SCRAPERS

BULLDOZERS

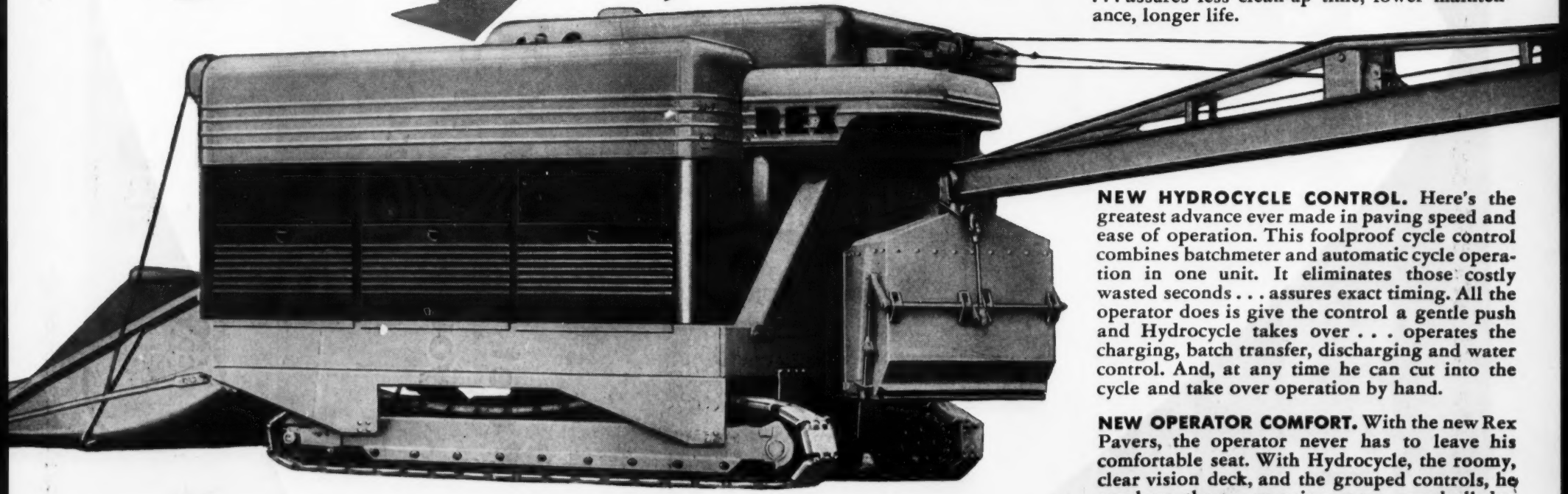
RIPPERS

POWER CONTROL UNITS

TRAIL BUILDERS

the new Rex Pavers

as new inside as they are out!



● 34E SINGLE AND DOUBLE DRUM PAVERS

CHAIN BELT COMPANY . . . REX CONSTRUCTION MACHINERY

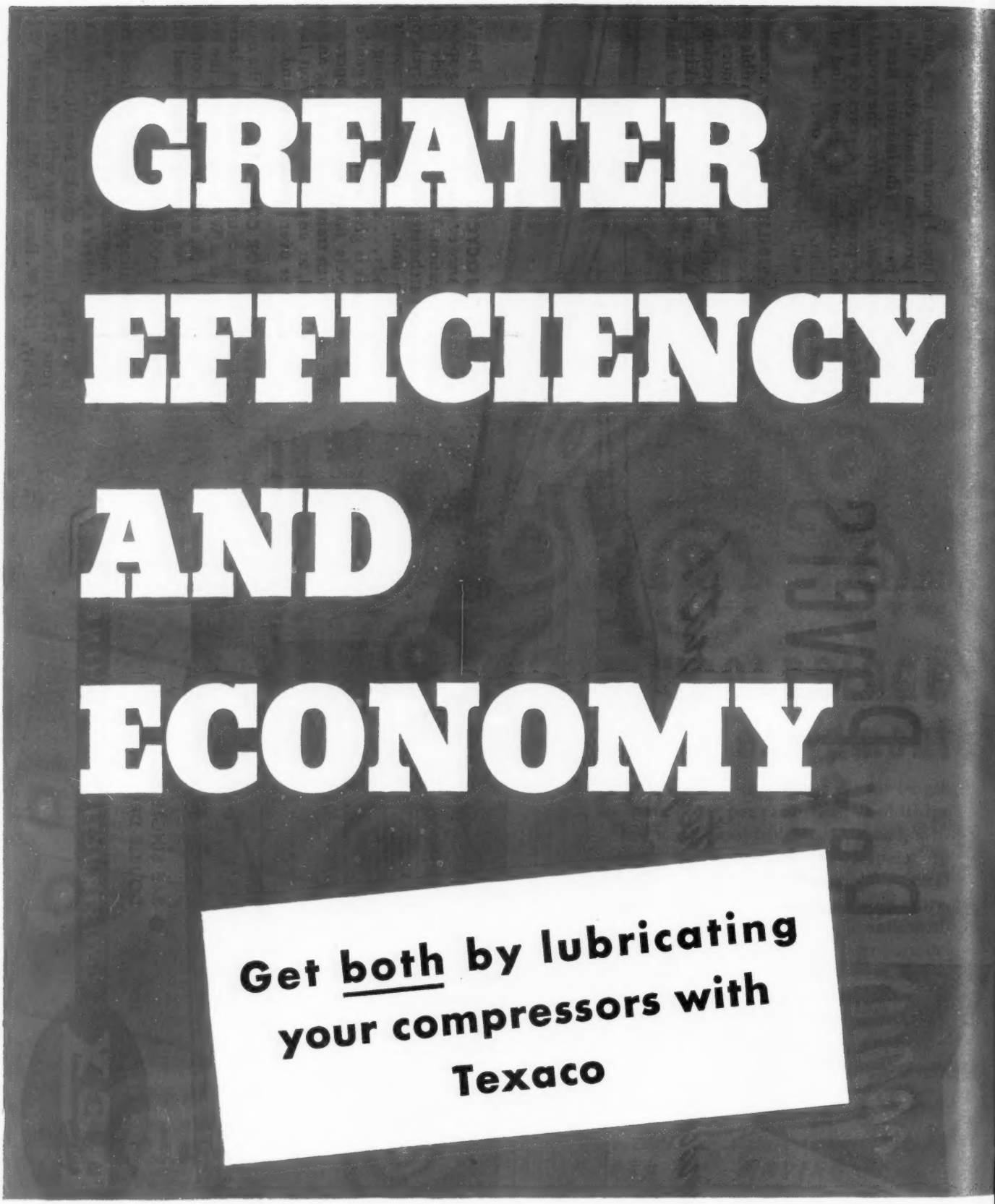
● Before you spend your money for a paver for the big road program ahead, check the only basically new pavers in the industry. Rex Pavers are new *inside and out*... from the ground up... field-tested and proved by 4 years of actual experience in the roughest, toughest kind of high speed production. Just look over the new advantages Rex will give you:

NEW ACCESSIBILITY. The new streamlined shielding makes these the most accessible pavers you've ever seen. Big, easy-opening doors permit quick access for lubrication and inspection. And streamlining keeps dirt off the working parts . . . assures less clean-up time, lower maintenance, longer life.

NEW HYDROCYCLE CONTROL. Here's the greatest advance ever made in paving speed and ease of operation. This foolproof cycle control combines batchmeter and automatic cycle operation in one unit. It eliminates those costly wasted seconds . . . assures exact timing. All the operator does is give the control a gentle push and Hydrocycle takes over . . . operates the charging, batch transfer, discharging and water control. And, at any time he can cut into the cycle and take over operation by hand.

NEW OPERATOR COMFORT. With the new Rex Pavers, the operator never has to leave his comfortable seat. With Hydrocycle, the roomy, clear vision deck, and the grouped controls, he can keep the paver going at top speed all day long with far less effort.

AND NEW simplicity of design, new rugged construction, new ease of spreading, new type crawlers . . . there's a whole host of new features it will pay you to check. For all the facts, see your Rex Distributor or write Chain Belt Company, 1664 W. Bruce St., Milwaukee 4, Wis.



Tune in . . .
TEXACO STAR THEATRE
every Wednesday night
starring
Milton Berle.
See newspaper for
time and station.

TEXACO

TEXACO

Photo courtesy Joy Mfg. Co., Sullivan Division.

GIVE your compressors effective lubrication – *Texaco* – and they'll deliver full volume and pressure for extra hundreds of hours between overhauls. Texaco has a complete line of lubricants to assure greater efficiency and economy for compressors of every size and type under all operating conditions.

Texaco Cetus, Alcaid and Algol Oils, for instance, have all been specially processed to remove impurities that form hard carbon and gummy deposits. They keep valves clean, rings free, ports open and air lines clear – greatly reduce the need for repairs, replacements and overhauls.

For compressing wet air, use *Texaco Regal Oils (R & O).* They give full protection against rust formation – even during idle periods and in intermittent operation. To make your drills last longer – run more efficiently and economically – use *Texaco Rock Drill Lubricants EP.*

A Texaco Lubrication Engineer will gladly help you select the best Texaco lubricants for your particular needs. Just call the nearest of the more than 2300 Texaco Wholesale Distributing Plants in the 48 States, or write:

The Texas Company, 135 East 42nd Street, New York 17, N. Y.

Lubricants and Fuels

FOR ALL CONTRACTORS' EQUIPMENT

How the proper application

of wire rope

-may save you money

● Every user wants to get the best possible service out of his wire rope but it is amazing how often simple rules are broken in the field. Some operators are careless when installing a new rope . . . they keep machines running when sheaves are badly worn . . . they overload the rope . . . they forget to lubricate the rope.

To help eliminate these human failings, the American Steel & Wire Company maintains a staff of TIGER BRAND Wire Rope Specialists. These men are experienced field service engineers. If you have not checked your equipment recently, for correct wire rope application, call in the TIGER BRAND Specialist. He'll do the job for you without charge. Here are some of the points he checks before recommending the proper wire rope for your job—

1. Method of installing and caring for rope.
2. Diameter of sheaves and drums, and condition of grooves.
3. Arrangement of sheaves.
4. Fleet angles.
5. Loads handled.
6. Rope speeds, acceleration and deceleration.
7. Presence of vibration, whipping.
8. Lubrication.
9. Corrosion.
10. Amount of scrubbing and abrasion.
11. Fitting attachments.
12. Abuses to be corrected.
13. Analysis of service records.
14. Finally: Recommendation of the correct rope to meet all conditions.

To show you how you can save money on wire rope, we have prepared a booklet on proper wire rope application that every user of wire rope should read. You can get a copy by mailing the coupon.

AMERICAN STEEL & WIRE COMPANY, GENERAL OFFICES: CLEVELAND, OHIO
COLUMBIA STEEL COMPANY, SAN FRANCISCO
TENNESSEE COAL, IRON & RAILROAD COMPANY, BIRMINGHAM, SOUTHERN DISTRIBUTORS
UNITED STATES STEEL EXPORT COMPANY, NEW YORK

SEND FOR NEW FREE BOOKLET

American Steel & Wire Company
Rockefeller Building, Dept. B-11
Cleveland 13, Ohio

Gentlemen:

Send me your booklet, "Valuable Facts about the use and care of Wire Rope."

Name.....

Position.....

Company.....

Address.....

AMERICAN TIGER BRAND WIRE ROPE

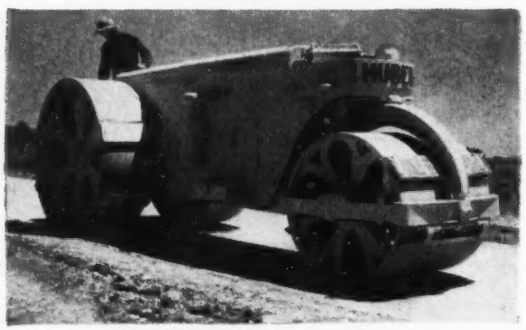
Excellay Preformed

UNITED STATES STEEL

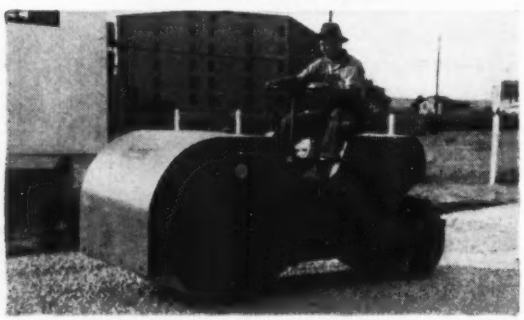
Go to Town

With HUBER ROAD MACHINERY

THE HUBER MAINTAINER



THE HUBER 3-WHEEL ROLLER



THE HUBER 3-4 TON TANDEM ROLLER

Smart road men know the advantages of putting Huber road machinery on their toughest road jobs. After several operations you'll be surprised at Huber's speed... efficiency... and ability to really take it, to say nothing of Huber's proven economy of operation.

These Huber characteristics are the results of over 35 years experience in the road machinery field. During these years Huber has paid particular attention to the needs and demands of reliable road men – a practice which has enabled Huber to give you machinery more suited to all road operations.

Size up the scope of your road work and let your Huber distributor help you specify a Huber machine to do your job better. Huber rollers are available in either 3-wheel or tandem models in sizes from 3 to 14 tons – more than ample for any road assignment. For a real "ace in the hole" you can't beat the versatile Huber Maintainer. It's a bulldozer, lift-loader, patch roller, berm leveler, snow plow, or rotary broom all in one. It's a "must" for highway departments and other maintenance units. Write today for bulletins describing the Huber road machinery which most interests you.

THE HUBER MFG. COMPANY • MARION, OHIO, U. S. A.

HUBER

3 Wheel • Tandem

ROAD ROLLERS *and* MAINTAINERS

ALL-WEATHER

TRUCK TRACKS

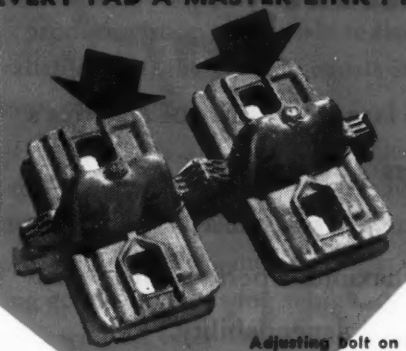
ECONOMICAL . . .
Amazing low price puts TRUCK TRACKS within the reach of every truck owner.

$235 Tandem Axle set **$120** Single Axle set

PROVEN . . .
Outstanding performance in mud, sand and snow for the past 6 years!

VERSATILE . . .
Super traction for single as well as tandem axle trucks. Fit almost all standard rear duals.

EVERY PAD A MASTER LINK . . .



Adjusting bolt on every pad assures perfect fit, perfect track tension.

STAY ON THE JOB
Weather or No!

Beat the Mud and Snow this winter . . . mount TRUCK TRACKS on your rolling equipment. TRUCK TRACKS can eliminate seasonal shutdowns on the job by adding *tractor performance* to your trucks. Ideal for desert operations the year 'round.

Drivers mount TRUCK TRACKS in 10 minutes time; remove them in less. Adjustments are simple and easy to make. Nothing to break, bend or loosen . . . maintenance is negligible.

TRUCK TRACKS are easy to order, too! Just send tire size; whether single or tandem axle. Accompany order with a check for $50.00 per set, and your TRUCK TRACKS will be shipped C.O.D. the day your order is received.

P & G SUPPLY CO., 615 S. E. Market St., Portland 14, Oregon (M

☐ Please ship C.O.D. immediately:

_____Sets of TRUCK TRACKS for Single / Tandem axle _____x_____tire size.

(Check for $50.00 per set deposit enclosed.)

☐ Rush further details.

NAME_____

ADDRESS_____

CITY_____ STATE_____

Shipping Instructions_____

P&G SUPPLY CO.
615 S. E. Market Street
PORTLAND 14, OREGON

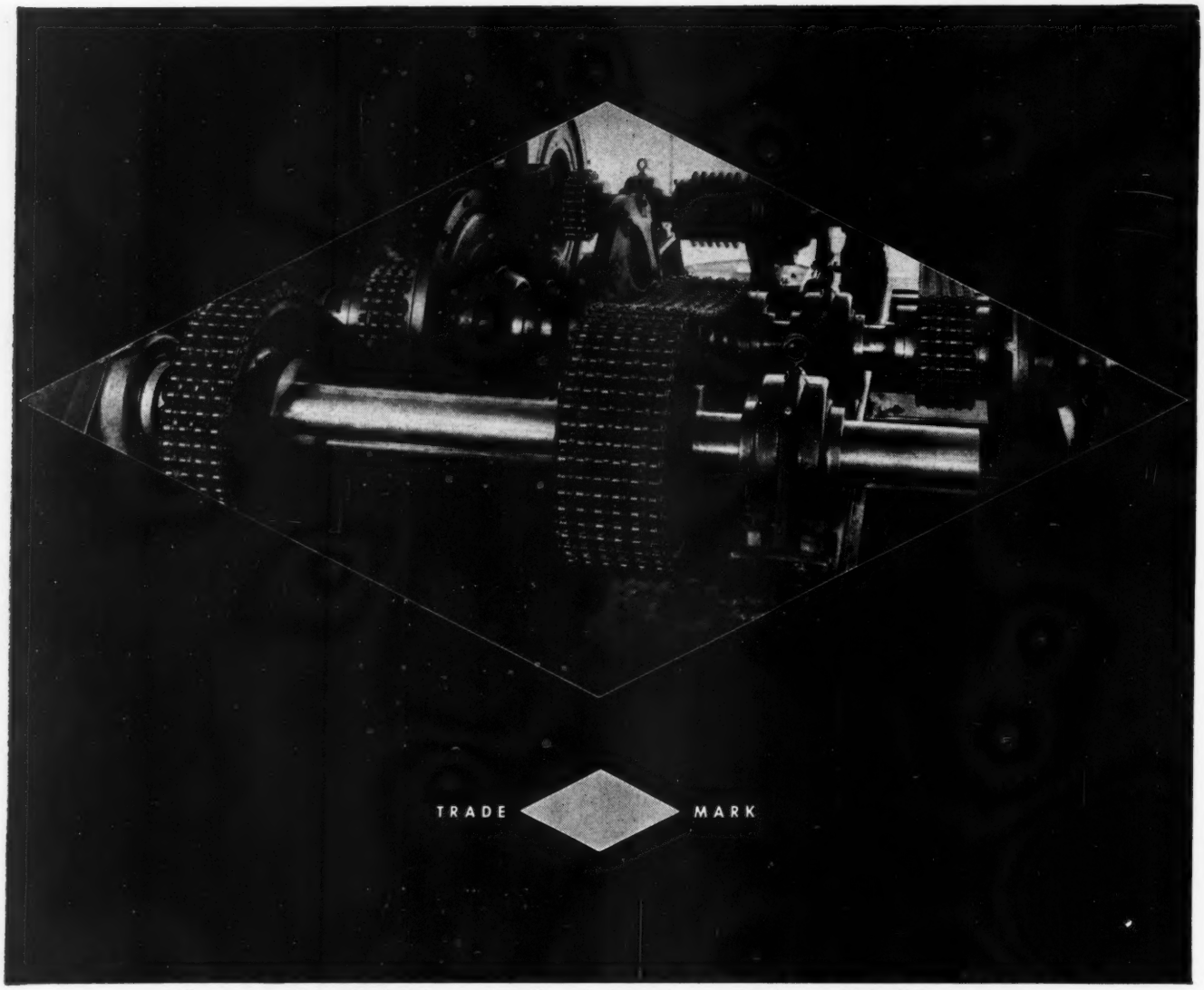


Illustration shows both Diamond Roller Chain Drives and Diamond Flexible Couplings.

The "Diamond" is Your Guarantee of Unvarying Quality

• Through nearly sixty years of continuous Roller Chain manufacture, the Diamond trademark has meant one unvarying standard of quality—the mark of excellence, reliability and integrity.

Preferred by so large a majority of America's leading builders and users of machinery and equipment, Diamond Roller Chain Drives insure maximum performance efficiency and long-life dependability.

DIAMOND ROLLER CHAIN DRIVES

Diamond Chain Company, Inc. Indianapolis 7, Indiana

THE NEW FLEXARC RANGER

GETS THERE FAST...

ANYPLACE...ANYTIME

A SMALLER, LIGHTER
ENGINE DRIVEN WELDER
PORTABLE OR SKID-MOUNTED

YOU CAN BE SURE IF IT'S Westinghouse

You'll find the answer for tough field construction and maintenance jobs in this new Flexarc Ranger. The Ranger goes to work anywhere, anytime . . . travels faster, farther, over rougher terrain . . . works in places inaccessible to larger, heavier equipment. It trails along at highway speeds . . . produces "shop" welds where electric power is not easily available. Yet, the Ranger equals big-welder efficiency at lower operating costs.

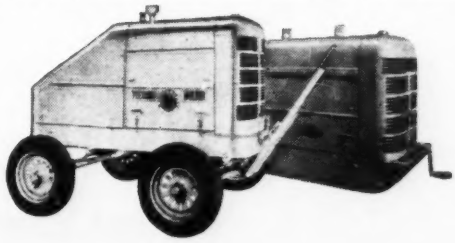
Powered by a 4-cylinder Hercules industrial engine, the Ranger has a rating of 200 amps, 30 volts, 50% duty cycle, with a welding current range of 30 to 250 amperes. 2-wheel, spring-mounted, pneumatic-tired, standard road gauge running gear permits towing at high speed. Welder comes complete, with all essential accessories.

For full details on the Ranger and other Flexarc A-C Welders, call your nearby Westinghouse office, or write Westinghouse Electric Corporation, P. O. Box 868, Pittsburgh 30, Penna.

J-21467

Westinghouse Heavy-duty Engine-driven Welders

This husky welder is built for hard, continuous service wherever electric power is not available. Single, preset current adjustment gives the exact welding current desired without drop-off. Gasoline or diesel engine operated . . . available in 200, 300 and 400-ampere ratings . . . supplied with either bedplate or wheels.

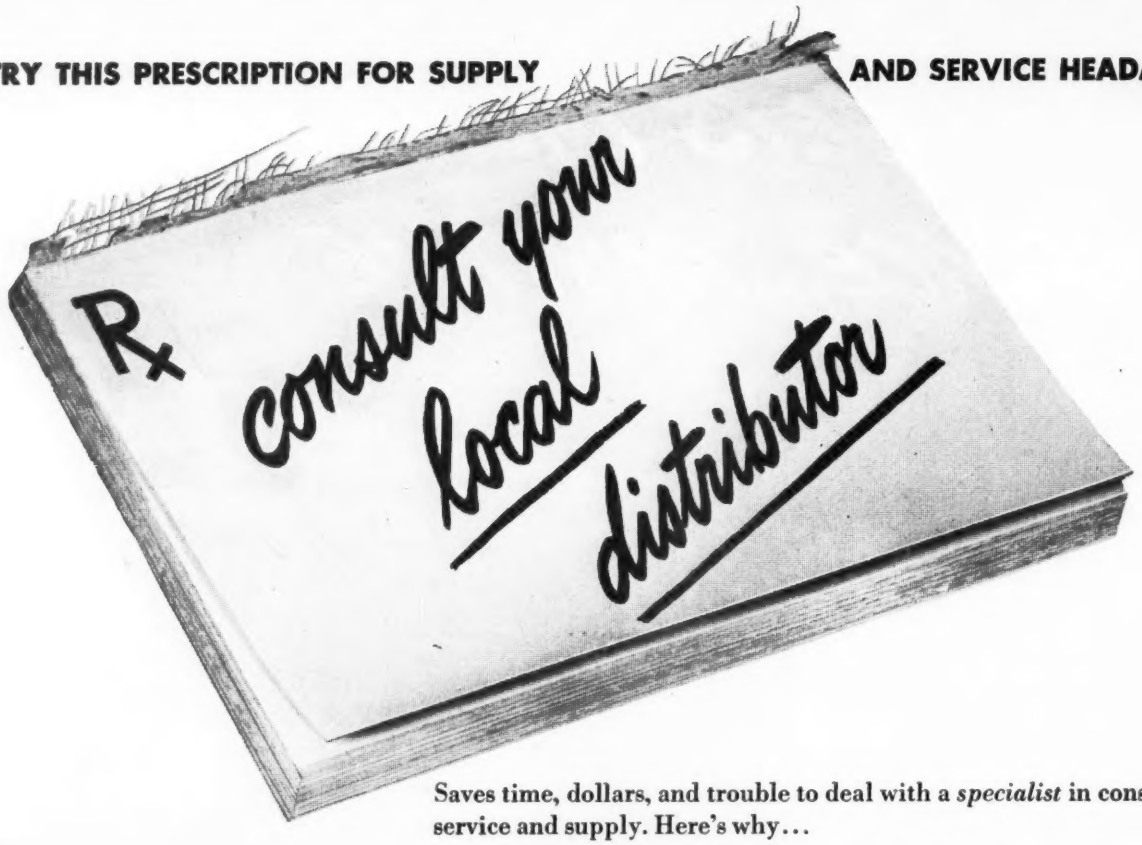


Westinghouse FLEXARC

PLANTS IN 23 CITIES . . . OFFICES EVERYWHERE

WELDERS AND ELECTRODES

TRY THIS PRESCRIPTION FOR SUPPLY AND SERVICE HEADACHES . . .



Saves time, dollars, and trouble to deal with a *specialist* in construction service and supply. Here's why . . .

*The local distributor anticipates your product needs . . . orders and stocks hundreds of items immediately available to you from his conveniently located warehouse.

*Long-distance shopping is reduced to a minimum. You *see* what you're buying at the distributor's counter or in his showroom . . . you *talk* to the man who sells you.

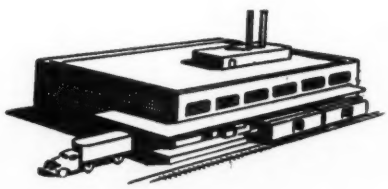
*You effect substantial savings on office correspondence, wires, phone calls, invoices, and checks by dealing with one local source instead of many distant, scattered sources.

*You benefit from valuable after-sale service including expert on-the-job and shop repairs, field check-ups, and prompt parts replacements from stock that keep your equipment operating costs down.

*What the distributor can't supply from stock, his thorough knowledge of product sources and procurement procedures enables him to obtain for you economically and fast.

You can deal in confidence with your local distributor. He's equipped, qualified and eager to cooperate with you on problems of service and supply . . . and he's a local business man, too, who stakes his reputation in his territory on how well he serves you. Consult him today.

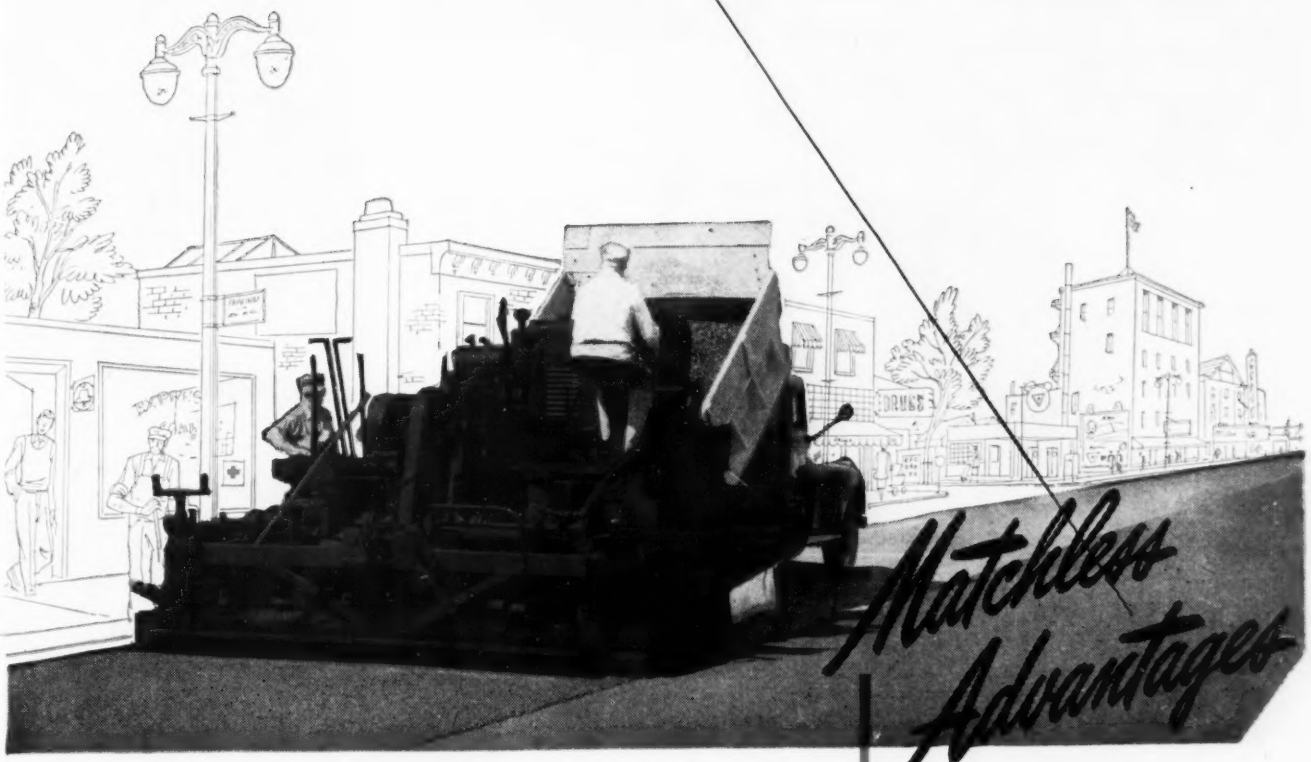
Make Distributor's Headquarters Your Service Headquarters



No. 10 in a series sponsored by
ENGINEERING NEWS-RECORD and CONSTRUCTION METHODS
showing how distributor services aid economical construction

Barber-Greene

• the finisher that offers



Built into the B-G Tamping-Leveling Finisher are advantages that combine to assure superior performance on the widest variety of bituminous paving jobs. For instance . . .

The B-G Finisher *tamps, levels* and *"strikes off"* simultaneously — automatically measures the correct amount of compacted material for the depressions — leaves a level surface that is maintained under rolling and traffic. The B-G Finisher *automatically* adjusts to differences in the sub-grade and lays to the established grade.

There are other important advantages. For the whole story of B-G Finisher performance, see your Barber-Greene distributor.

Positive Traction

Crawlers have the traction to push loaded trucks up grades while unloading . . . plus adequate control of steering necessary on any job.

Large Hopper

Five-ton hopper saves delays, allows Finisher to operate between truck loads.

Dual Controls

The B-G Finisher may be operated from either side — for easier control while matching previous mat.

Wide-Range Utility

For all bituminous jobs — from sheet asphalt to stabilized mixes — the B-G Finisher is economical, efficient and adds to the quality of the road.

BARBER · GREENE COMPANY AURORA, ILLINOIS

Constant flow Equipment

the LITTLE MACHINE that gets BIG results!

THE 1/3 YARD SCHIELD BANTAM

TRUCK MOUNTED TRENCH HOE
SHOVEL • CLAM • DRAGLINE
PILEDRIVER • CRANE

NORMAL CAPACITY PER HOUR

- **Shovel or Dragline — 60 yards**
- **Trench Hoe — 100 feet of 5 ft. ditch**

Drive up and dig in. The Schield BANTAM goes into tight spots and gets the job done fast and economically. Its *full circle design* and smooth, *fast cycle operation* pile up profit-making yardage.

Big machine design with *no strain* on center pin, high strength alloy construction throughout. All major assemblies roll on ball bearings for easier handling, longer service life, lower maintenance costs.

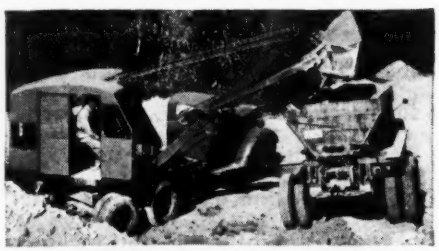
Easily changed booms and buckets make the Schield BANTAM 6 machines in one, ready on short notice to speed across town or across country. Mounts on any 1½ ton truck chassis.

For performance that spells profits in excavation and backfill, drainage work, basement digging, handling construction materials, etc., put a Schield BANTAM on the job.

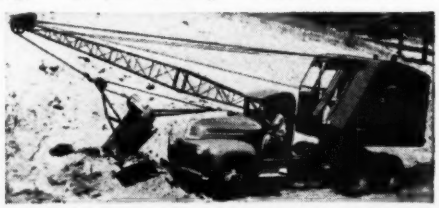
Write for complete details now

THE SCHIELD BANTAM CO., INC.
221 Park Street **Waverly, Iowa**

Fast on the job and fast on the road. The BANTAM Trench Hoe all set to travel.



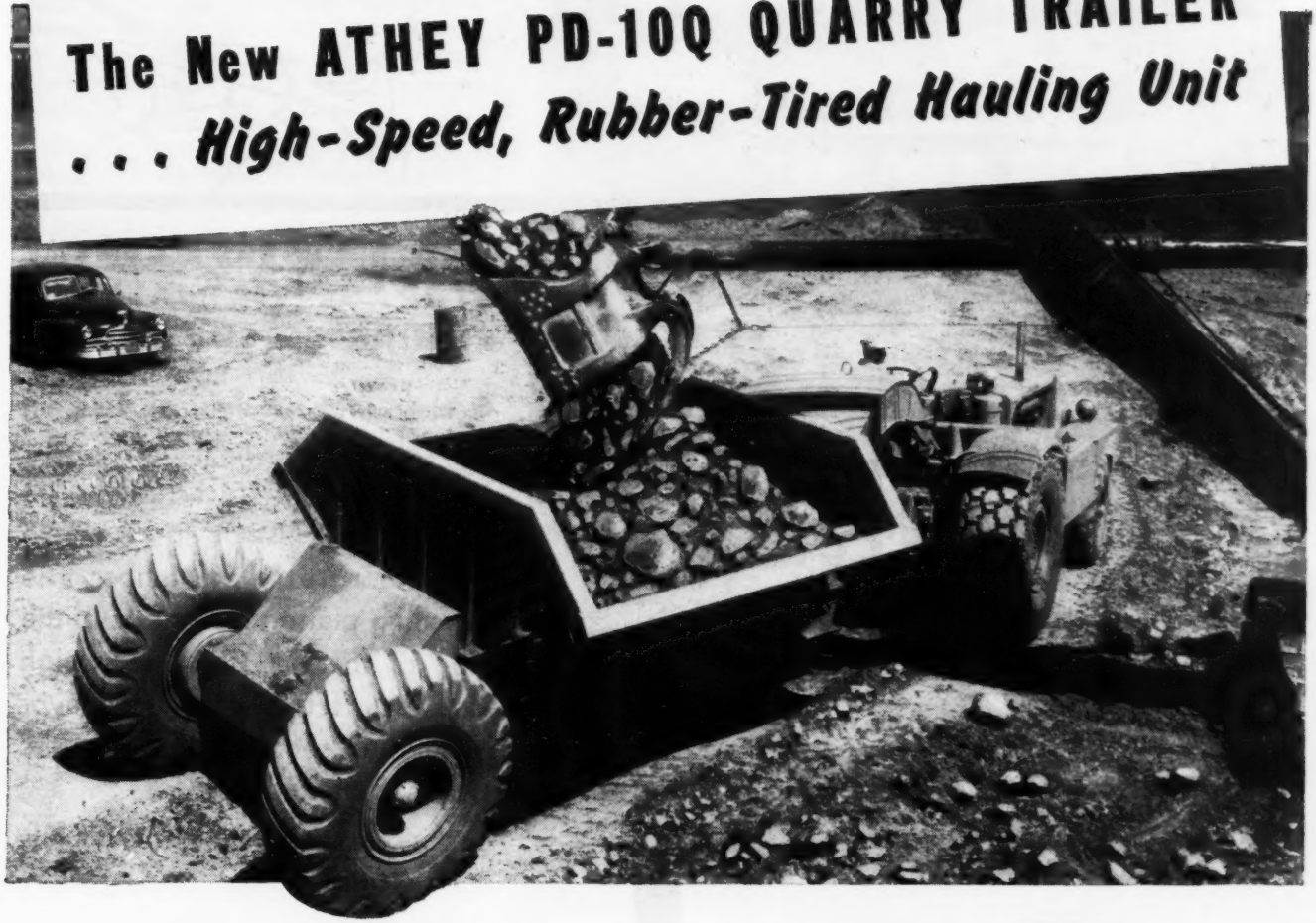
The BANTAM Shovel is ideal for economical handling of stockpile materials.



Dragline with box boom. The BANTAM is convertible in a matter of minutes.

SOLD AND SERVICED BY LEADING CONSTRUCTION MACHINERY DEALERS THROUGHOUT THE UNITED STATES, CANADA, AND FOREIGN COUNTRIES

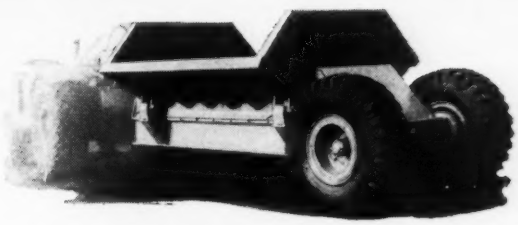
The New ATHEY PD-10Q QUARRY TRAILER
. . . High-Speed, Rubber-Tired Hauling Unit



● Setting new records in rock and quarry hauling, the Athey PD-10Q rubber-tired Trailer is a new production star in the hauling field. Speed and capacity, with agile dumping ability to either side, make this new teammate for the "Caterpillar" Diesel DW10 Tractor a profit winner for contractors and pit operators.

Sturdy, welded construction of new high-tensile strength steels withstands the impact and abrasion of rock loading. Heavy hexagonal shaped crossmembers absorb the torque or twist in the frame when dumping. Low pressure tires — interchangeable with the DW10 driving tires — reduce rolling resistance, permit faster hauling of heavier loads. See your nearest Athey-"Caterpillar" Dealer about the PD-10Q today, or write . . .

ATHEY PRODUCTS CORPORATION
5631 W. 65TH STREET, CHICAGO 38, ILL.



BRIEF PD-10Q SPECIFICATIONS

Capacity, Struck, Cubic Yards	5½
Capacity, Heaped, Cubic Yards (approximate, based on 2:1 slope)	10
Dimensions:	
Overall Length, Trailer Only	23' 9½"
Overall Length, with Tractor	35' 8"
Overall Width	10' 10"
Overall Height	7' 7"
Body Length, Inside	9' 8"
Body Height, Inside (Top of Side Plate)	2' 1"
Body Width, Inside	10' 2"
Loading Height, Across Side	5' 9¾"
Loading Height, Across End	7' 5"
Tread	84"
Tire Size (Standard) Rock Grip	18.00 x 25—20 Ply
Brakes	Air-Operated from Tractor Brake Controls
Wheelbase	20' 5½"
Weight, Shipping, Trailer and Hydraulic Control System (Approx.) Pounds	15,000

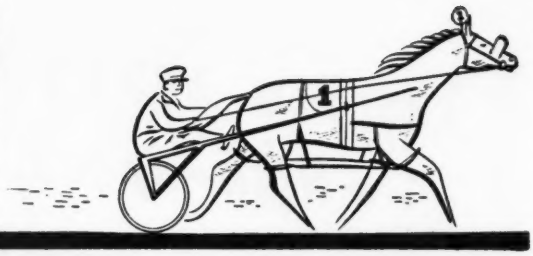
Athey APCOR Products

Athey Rubber-Tired Trailers

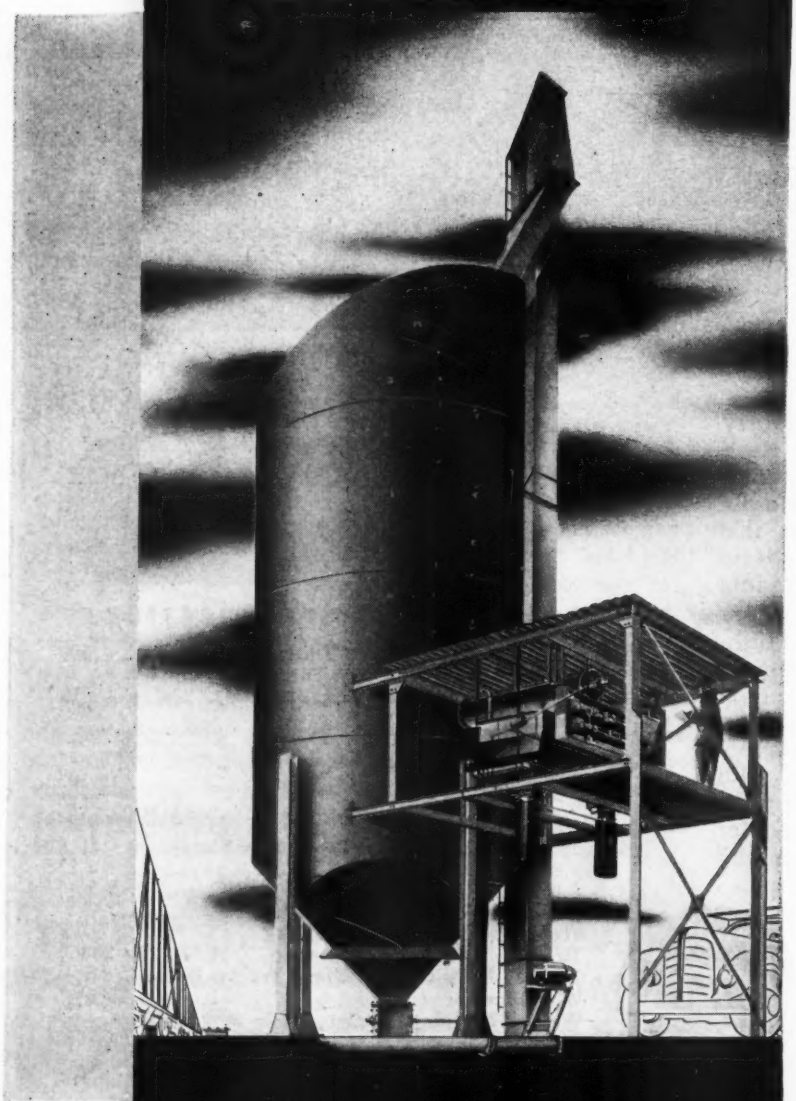
FORCE-FEED LOADERS | MOBILOADERS | FORGED-TRAK TRAILERS | RUBBER-TIRED TRAILERS

paced to team with

a DUAL DRUM paver



the BUTLER *Auto-batch* TWINBIN



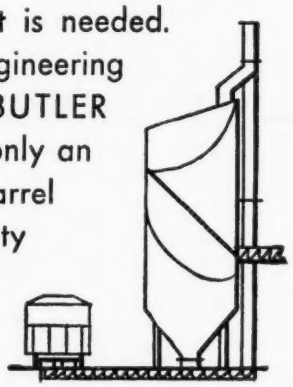
BUTLER BIN CO.

WAUKESHA • WISCONSIN

AMPLE RESERVE CEMENT STORAGE VIRTUALLY ELIMINATES SHUTDOWNS

● Here in the Autobatch Twinbin BUTLER utilizes the space formerly provided for truck loading, — converting it instead to an ample "first floor" *reserve* chamber. The batching platform is pinned to the side of the bin and the weigh batcher is fed by screw conveyor from the "second story" — the active chamber.

When the active chamber is full, an overflow device feeds the reserve below, — a supply which is brought again to the upper compartment as it is needed.



This new engineering advance by BUTLER provides not only an ample 531 barrel cement capacity but with it an actual gain in portability.

The dual ***automatic*** cement batcher can weigh out two batches of cement in thirty-five seconds for simultaneous discharge into the batch truck.

Investigate BUTLER'S solution to the cement storage problem brought about by today's high speed batching demands.

Send for the "Twinbin Bulletin".

2 BASEMENTS PER DAY with a TL-20 HOE

...speeds new housing project in Peoria, Illinois

Mr. E. A. Moreland, General Contractor, Peoria, Illinois, is a staunch believer in efficient, profitable operation. When faced with the problem of digging 35 basements for a new housing project, Mr. Moreland moved a new ½ yd. TL-20 crawler-mounted hoe onto the job.

The contract was completed in record time. *All 35 basements in less than 18 days for an average of 2 basements per day*—totalling 6475 cubic yards!

Says Contractor Moreland: "Our TL-20 has seen a lot of rough work. In six months our only repair was a replaced brake band —an easy job. It has given us wonderful performance with no upkeep cost."

You, too, can capitalize on the greater earning power of the TL-20. It is available with 5 booms and 10 different mountings that provide a total of 50 possible combinations to match your job conditions. For complete details on this versatile equipment, call your local Thew-Lorain distributor—today!

THE THEW SHOVEL CO. • Lorain, O.
Cable address: UNLOADER

Lorain Thew TL-20 Lorain

ONTARIO. A "Caterpillar" Diesel D7 Tractor, equipped with hydraulic snow plow and wings, opening a Grey County road for traffic. County owns several other "Caterpillar" units.

JUST A

FOR

MINNESOTA. A "Caterpillar" Diesel No. 12 Motor Grader, equipped with snow plow and wing, opening a Norman County highway packed with rock-hard snow three to ten feet deep.

CATERPILLAR D

REG. U. S. PAT. OFF.

A PUSHOVER
FOR "CATERPILLAR" DIESELS

BEHIND a snow plow "Caterpillar" Diesel Tractors and Motor Graders take tough jobs in their stride. Last winter's record-breaking falls and drifts were an especially tough challenge. But the machines went through! Engine mounted directly over the drive wheels in the Motor Graders and all weight saddled over broad, deep-grousered tracks in the Tractors, give these snow-fighters huge capacity and lugging ability.

It is the sort of equipment which throughout the heavy-winter belt is wiping out the dread of rural and municipal isolation due to snowbound roads. It is keeping marketways open, mail, school bus and doctors' routes clear, ranches accessible, factories in operation. What county or city today can afford not to look toward the winters' needs for keeping its people and businesses going about their daily work?

CATERPILLAR TRACTOR CO. • PEORIA, ILLINOIS

SOME USER COMMENTS

- "This 'Caterpillar' No. 12 is a fine machine—great for the different jobs it can do. In summer we use it for ditching, back-filling and general road maintenance. In winter we've cleared up to 60 miles of road a night (11 hours). We like its speed—the way it can get up and go on the snowy roads."—*Clarence Gibbons, Operator, New Liskeard, Ont., Department of Highways.*

- "Here in Kittson County, Minn., we are right in the center of the blizzard bowl. The storms come roaring in over thousands of square miles of open prairie country. It is then when we appreciate our big 'Caterpillar' No. 12 Motor Graders with their added power and dependability. We are 100% sold on 'Caterpillar.'"—*J. S. Schmit, County Engineer's Office.*

- "The new 'Caterpillar' Diesel No. 12 is about the best motor grader job on the market. Its added power makes a big difference. You'd be surprised where we can operate it. A narrow road in the forest is an example—just wide enough to pass the machine, yet we never bark a tree."—*H. Pearson, Operator for Beltrami Co., Minn., Highway Engineers.*

- "We are well satisfied with the new 'Caterpillar' No. 12 Motor Grader. We plow and wing out around 100 miles of roads per 8-hour day—although we believe we could do considerably more."—*M. Nygard, Highway Engineer, Polk County, Minn.*

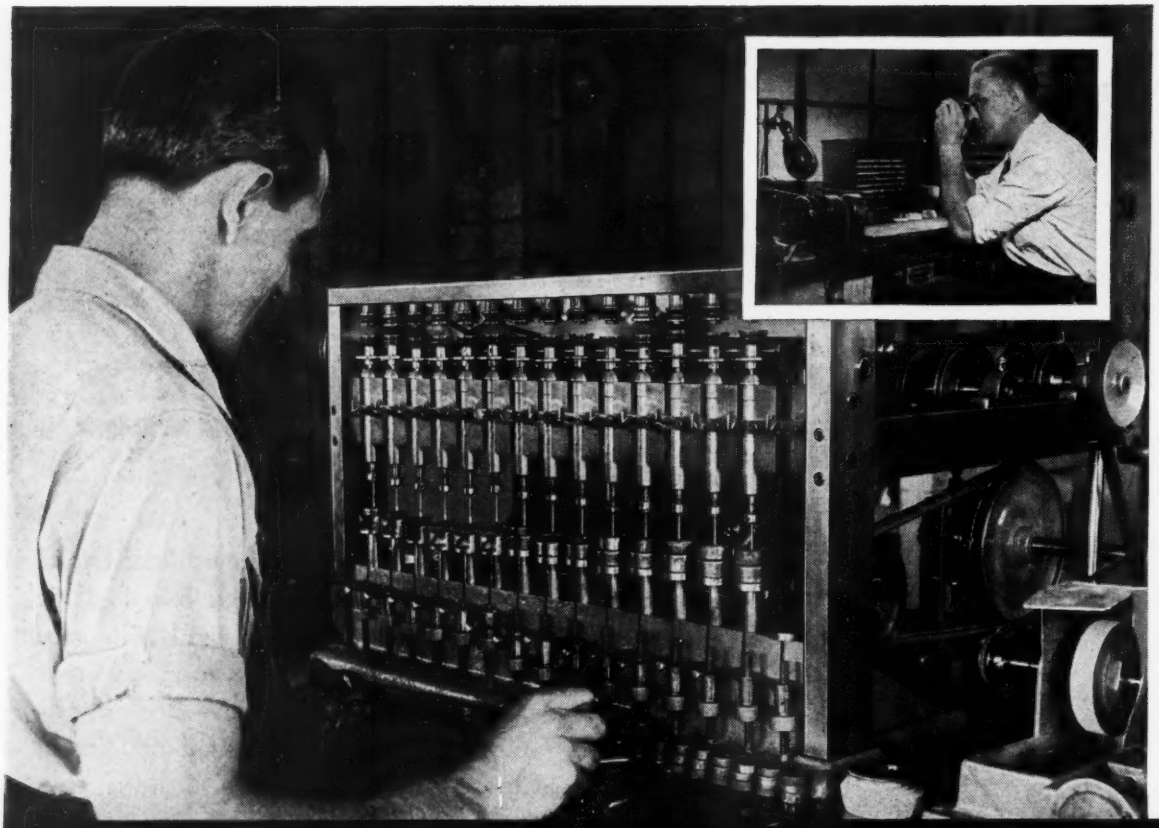
- "'Caterpillar' Diesel Tractors certainly do the snow-removal job! I think they work on less fuel than any other tractor we've had. What we also like is that the engine wears longer."—*Allan C. Cook, Cook Construction Co., Barrie, Ont.*

DIESEL

ENGINES • TRACTORS

MOTOR GRADERS

EARTHMOVING EQUIPMENT



These 'Drill Masters' Develop Precision in Wickwire Rope

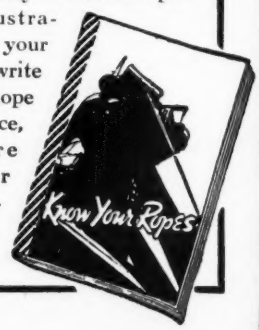
The workability and durability of wire rope is largely dependent upon accurate coordination of each wire in the rope. Because off-size wire can cause excessive friction and internal rope wear and early failure in service, every wire must be perfect in shape to fit into the exact geometric construction pattern of the rope.

Knowing this requirement—and knowing *how* to meet it—rests to a large extent with the men in the Die Department at Wickwire. These skilled craftsmen are perfectionists gifted with a passion for accuracy. Using special precision machines (some designed by men in the department), these patient, keen-eyed 'drill masters' create wire drawing dies drilled and ground to an accuracy within .0003 of an inch.

Such scientific precision characterizes every step in Wickwire Rope production. Small wonder then, that it is the choice of those who demand the utmost in performance, safety and long life. You can depend upon Wickwire Distributors and Rope Engineers for practical help in solving your wire rope problems. See your local Wickwire Distributor for Wickwire Rope in all sizes and constructions, both regular lay and WISSCOLAY *Pre*formed.

THIS 82-PAGE BOOK ON WIRE ROPE IS FREE. WRITE FOR YOUR COPY TODAY!

Thousands of wire rope users have found that the information packed in the pages of "Know Your Ropes" has made their work easier. It's full of suggestions on proper selection, application and usage of wire rope. It's easy-to-read and profusely illustrated. For your free copy, write—Wire Rope Sales Office, Wickwire Spencer Steel, Palmer, Mass.



WICKWIRE ROPE

CF&I & SUBSIDIARIES

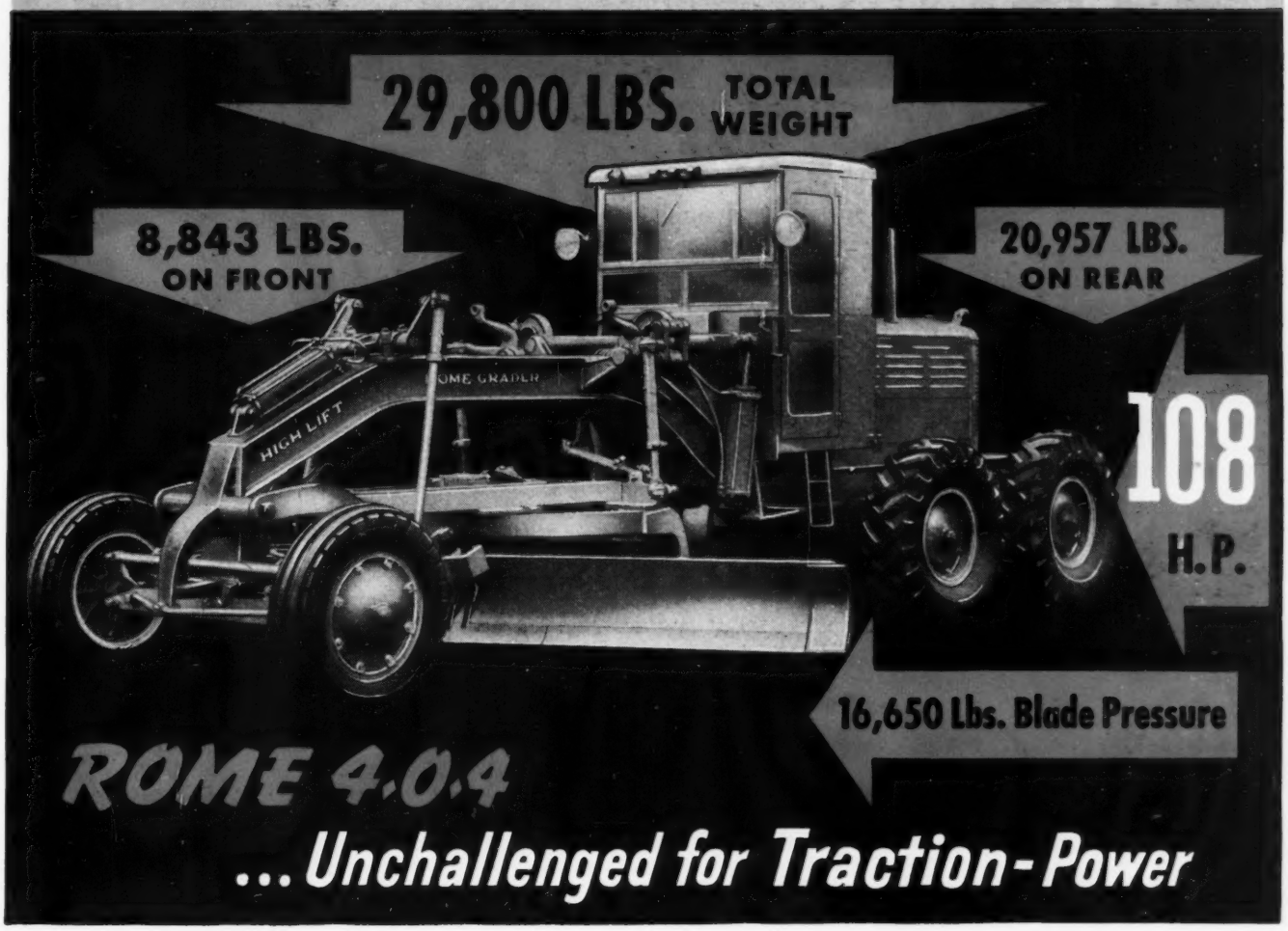
A PRODUCT OF THE WICKWIRE SPENCER STEEL DIVISION OF THE COLORADO FUEL AND IRON CORPORATION

WIRE ROPE SALES OFFICE AND PLANT—Palmer, Mass. **EXECUTIVE OFFICE**—500 Fifth Avenue, New York 18, N. Y.

SALES OFFICES—Abilene (Tex.) • Boston • Buffalo • Chattanooga • Chicago • Denver • Detroit • Emlenton (Pa.) • Fort Worth • Houston • New York • Philadelphia • Tulsa

PACIFIC COAST SUBSIDIARY—The California Wire Cloth Corporation, Oakland 6, California

"WEIGHT *produces* TRACTION, traction PLUS POWER *produces* pull on blade"



When two passes have to be taken at a cut, where one should do . . when less material has to be moved because the motor grader labors and stalls under the load . . the ***loss*** of ***time*** and ***money*** can only result from such operations.

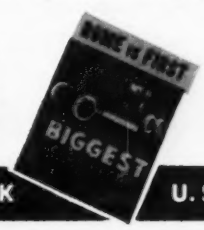
Almost every user of heavy-duty earth moving equipment knows that "weight produces traction, and traction Plus Power produces PULL." Yet, many fail to take these facts into consideration in purchasing their equipment needs. A quick study of the figures in the arrows surrounding the illustration of a ROME 4.0.4 Motor Grader should prove to any skeptic that ***ROME is producing*** greater traction by weight . . . and greater work capacity with ***SUPERIOR POWER.***

Make your own comparison with these figures with other graders. Only a ROME 4.0.4 can produce for its owner the kind of superior performance that saves both time and money on any type of grading job. For the operator of a ROME 4.0.4 there is surprise in store : a maneuverability unequalled . . with fingertip hydraulic control that is more positive and flexible ; and does not tire the operator.

A ROME 4.0.4 Motor Grader is the ALL-ROUND PERFORMER that should be on your next grading job.

Send-

for Bulletin 4785M and the address of your nearest Rome Grader Distributor

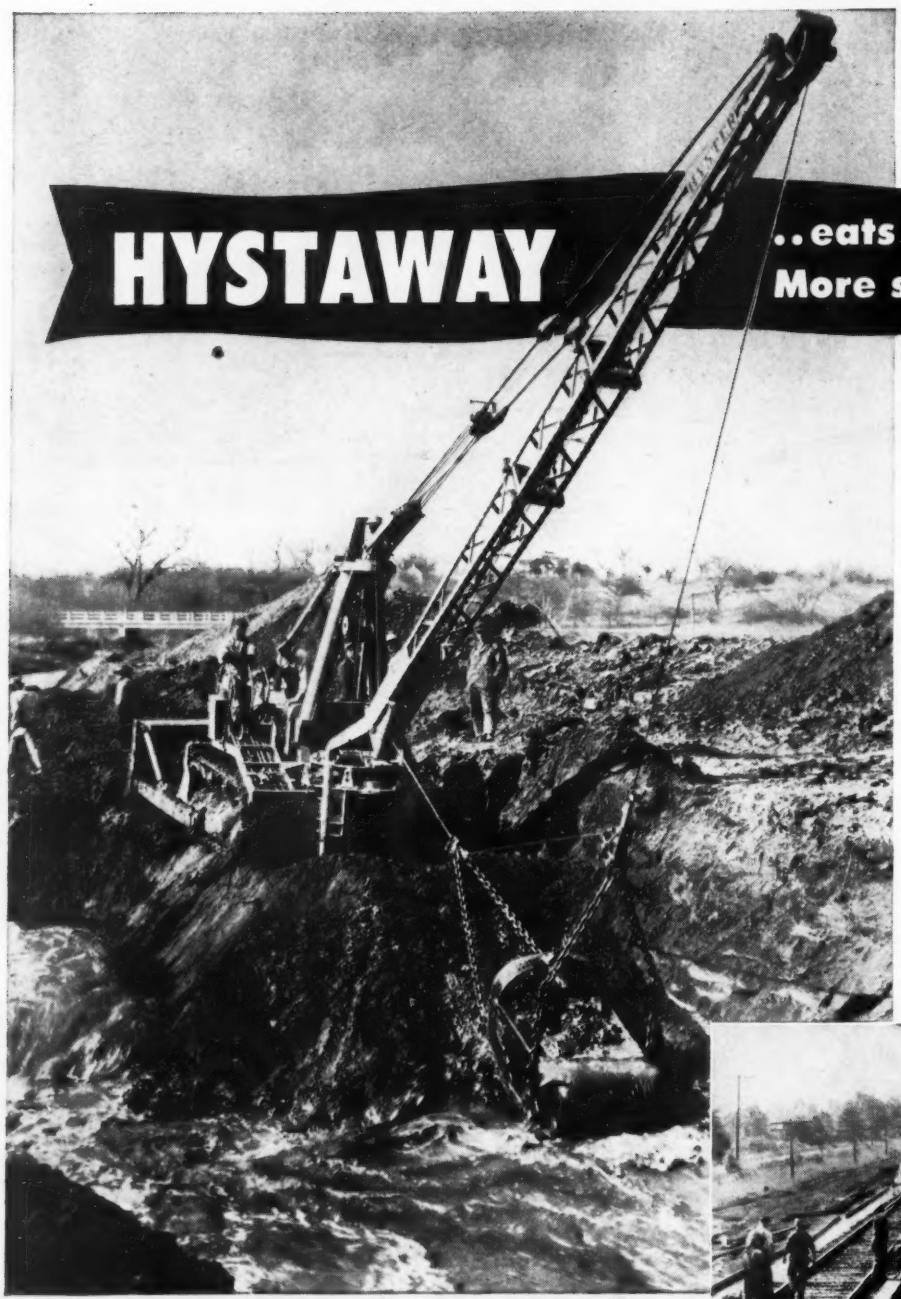


ROME GRADER AND MACHINERY DIVISION

THE UNION FORK AND HOE COMPANY . . . ROME, NEW YORK U.S.A.

HYSTAWAY ..eats up work — fast! More swings per hour

HYSTER



SAVING A BRIDGE FROM WASHING OUT by diverting a stream channel is the job of this D7 Hystaway working near Lawrence, Kansas.

UNLOADING RAIL FROM GONDOLA CAR. This D6 Hystaway enabled a work crew to unload from 100 to 120 rail an hour; each rail 39 feet in length and weighing **1,430 pounds.**

Good news gets around. Among construction men it's about the speedy, efficient earth moving performance of a Hystaway mounted on a D8, D7, or D6 "Caterpillar" track-type tractor. Provides tractor mobility *plus* the dragline, clamshell and crane features of the Hystaway unit.

Hundreds of Hystaways are in use on new and used "Caterpillar" track-type tractors.

Hystaway can be removed in one hour; installed again in two hours. Ask your "Caterpillar" distributor for a demonstration. Write for literature.

HYSTER COMPANY

2921 N.E. CLACKAMAS STREET.....PORTLAND 8, OREGON
1821 NORTH ADAMS STREET.....PEORIA 1, ILLINOIS

"TOUGHEST DIGGING I HAVE EVER SEEN A DRAGLINE DO" is the eye-witness description of a D7 Hystaway working on the Brandvlei earth-fill dam, Union of South Africa.

Plywood Announcement!

1 **A New, Simplified A-B-C System of Grade Identification for Douglas Fir Plywood Is Now in Effect.**

2 **Douglas Fir Plywood Is Now Produced in Accordance with New U. S. Commercial Standard CS45-48.**

In order to simplify the identification of Douglas fir plywood grades, manufacturers have adopted a new A-B-C system of grade-marking.

Plywood is manufactured in two distinct types—Exterior and Interior. Within each of these two types are several appearance grades. These grades—of either Exterior or Interior type—are determined by the appearance quality of the *outer plys* (face and back veneers).

Now, there are just four such qualities of veneer—A, B, C and D, in order of appearance quality.

Highest in appearance quality — "A" veneer — is that formerly known as "Sound." "B" veneer is a new quality, also known as "Solid," which presents a firm, solid surface, free from open defects. "C" and "D" veneers may contain certain restricted defects which do not affect panel serviceability, and are used where appearance is not important.

*As the new A, B, C, D veneer designations are being introduced, industry grade-trademarking of panels provides for designation either by letters or by previous terminology. Thus, as listed above, grademarks on panels may read either "PlyShield A-C" or "PlyShield SolS" (Sound 1 Side).

GRADES OF EXTERIOR-TYPE

EXT-DFPA•A-A (Sound 2 Sides)
EXT-DFPA•A-B (Sound 1 Side, Solid Back)
EXT-DFPA•PlyShield•A-C (Sound 1 Side)
EXT-DFPA•Utility•B-C (Solid 1 Side)
EXT-DFPA•Sheathing•C-C
EXT-DFPA•Concrete Form•B-B (Solid 2 Sides)

GRADES OF INTERIOR-TYPE

Interior•A-A•DFPA (Sound 2 Sides)
Interior•A-B•DFPA (Sound 1 Side, Solid Back)
PlyPanel•A-D•DFPA (PlyPanel Sound 1 Side)
PlyBase•B-D•DFPA (Solid 1 Side)
PlyScord• C-D•DFPA (Sheathing)
PlyForm•B-B•DFPA (Solid 2 Sides)

The new U. S. Commercial Standard CS45-48 for Douglas fir plywood becomes effective November 1, 1948. The Commercial Standard booklet contains complete data on the new system of grade identification* and new grade-trademarks, and sets forth more stringent performance requirements for Exterior-type plywood. A free copy will be mailed to any point in the United States. Send the coupon below.

Douglas Fir PLYWOOD

LARGE LIGHT STRONG *Real Wood* Panels

DOUGLAS FIR PLYWOOD ASSOCIATION
Tacoma 2, Washington

GENTLEMEN: Please send me my copy of the new U. S. Commercial Standard CS45-48, which contains new grade designations and new grade-trademarks for Douglas Fir Plywood.

NAME _____

Firm _____

Title _____

Street _____

City _____ Zone _____ State _____

Goodyear's famous
HARD ROCK LUG

PLENTY TOUGH

to stand the rough

THIS super work tire is right at home on the toughest, roughest construction jobs. It's Goodyear's Hard Rock Lug — *plenty tough* to take terrific punishment — proved by years of service to be unexcelled in stamina on tire-killing jobs. *Plenty tough* because its massive lug bars armor tread and sidewalls against cuts — its extra-thick undertread protects the carcass against bruises.

What's more, its self-cleaning universal tread pulls forward or reverse with equal power.

This tire is *first choice where the going's toughest*—comes through with low-cost, long-life performance typical of all job-proved Goodyear tires. It's another big reason why year after year, *more yards are moved on Goodyear off-the-road tires than on any other kind.*

A right tire for each job

EARTH MOVER SURE-GRIP — for maximum traction on drive wheels

EARTH MOVER ALL-WEATHER—for drawn vehicles and general traction

BUY AND SPECIFY GOODYEAR — *it pays!*

Sure-Grip, All-Weather—T.M.'s The Goodyear Tire & Rubber Company

GOODYEAR

1898 GOODYEAR 50 1948

MORE YARDS ARE MOVED ON GOODYEAR OFF-THE-ROAD TIRES THAN ON ANY OTHER KIND

Construction Methods

Volume 30 NOVEMBER, 1948 Number 11

CUTS AND FILLS

WHERE is all the reinforcing steel?

OVERTIME ON OVERTIME must now be paid under certain wage patterns because of the Supreme Court's refusal to review its previous decision. The issue is highly confused pending rulings by the wage and hour administrator.

LOOK FOR THE TRADITIONAL CONSTRUCTION WORK WEEK, starting Monday morning and ending Friday night, with overtime on Saturday and Sunday, to be ruled O.K. without penalty. But for weekly payroll periods that place Saturday and Sunday in the middle, the extra compensation paid for work done those days will probably be considered as "premium for working undesirable hours," and must be added to the weekly wage in considering overtime.

PENDING OFFICIAL RULINGS, contractors will do well to proceed cautiously in regard to week-end overtime. Meantime, all are advised to change their work week from Monday through Friday, if it is now some other period.

CONTRACTORS are being squeezed between demands for firm prices from their clients and escalator or price-on-delivery quotations for materials. Just another hazard and risk added to already uncertain conditions. Just another item boosting construction prices.

THE UNREASONABLE ATTITUDE of materials suppliers in this connection is demonstrated by the bidding situation on a proposed large bridge. Steel companies figuring the job insist on a firm price on the masonry and foundation work from prospective subcontractors. Yet these same firms refuse to quote firm prices for the necessary reinforcing and mesh on this particular job.

THERE'S LITTLE HOPE for stabilized construction prices so long as such ridiculous situations exist.

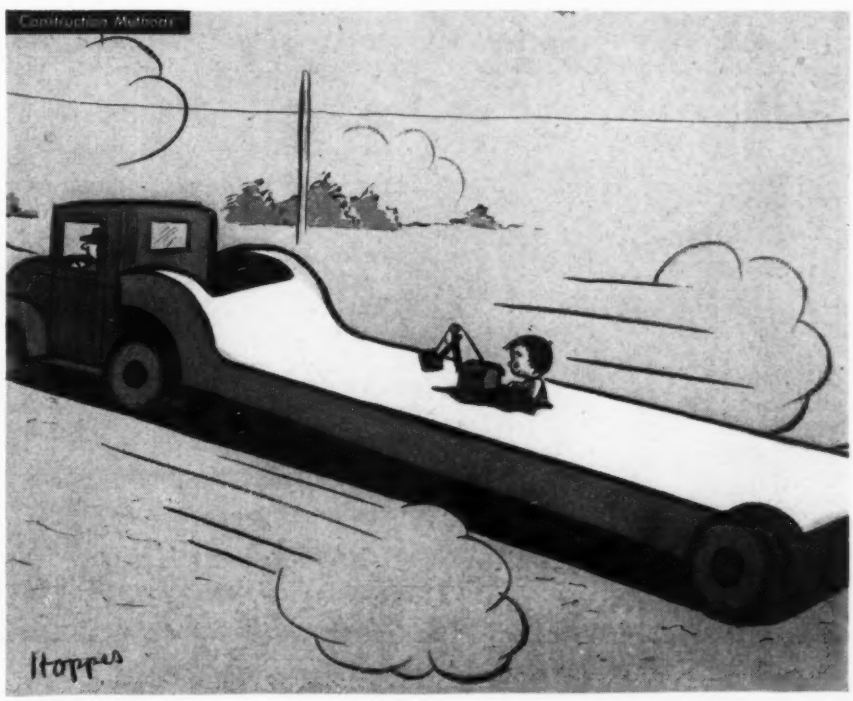
SOME HARASSED CONTRACTORS, fed up with uncertainties and burdensome risk taking, are suggesting the owner buy and furnish all materials.

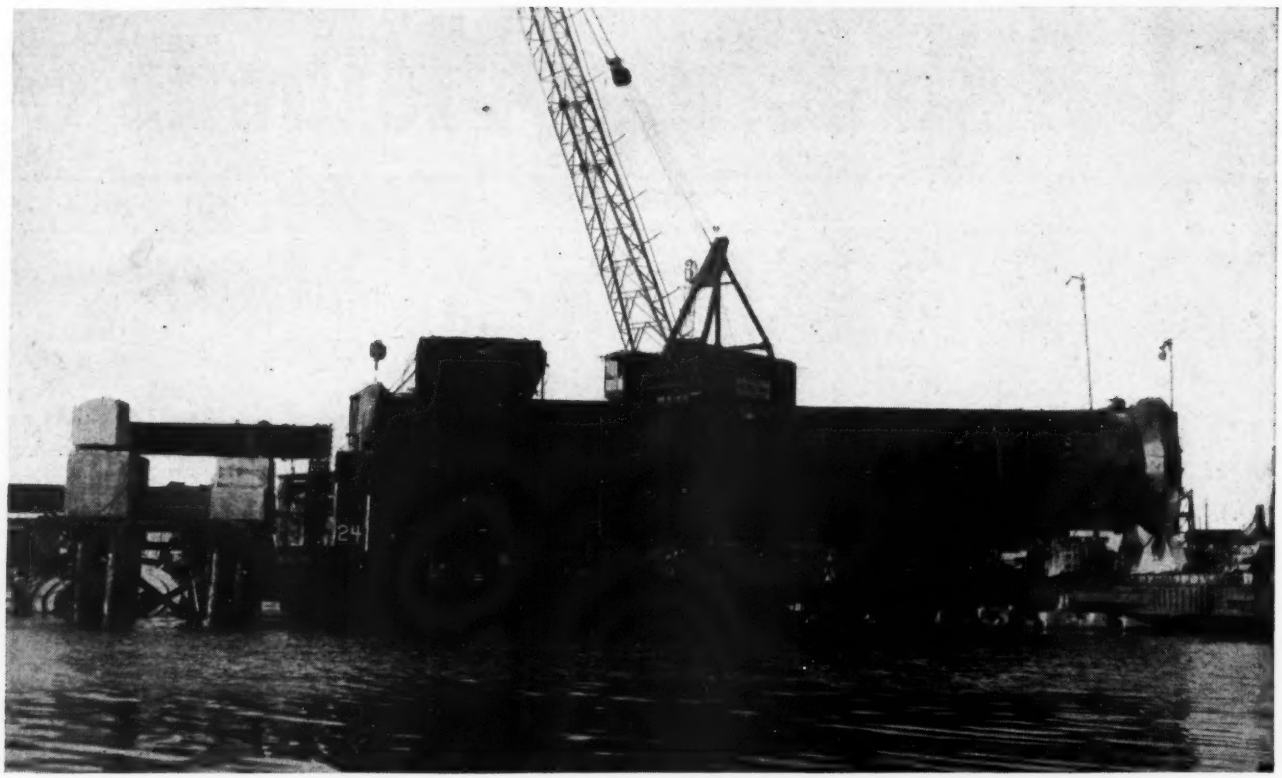
THAT'S NOT THE ANSWER, however, for contracting then becomes solely a labor and management function. The next step would be hired labor operations, an ever-present threat to the contract system.

IF MATERIAL SUPPLIERS expect to remain a part of the construction industry, they must be willing to assume some of the cost risk by quoting firm prices themselves.

CONSTRUCTION welcomes the announcement of the A.G.C.-A.S.C.E. joint cooperative committee to study matters of material concern to contractors and engineers. There is so much to be done in the way of better specifications, planning and designing for economical construction, setting up construction engineering courses in technical colleges, and improving awarding procedure, just to mention a few problems, that this committee will become one of the busiest and most important within the industry.

WITH STEEL AND CEMENT becoming more and more critical in supply, look for increasing use of structural timber. War-time developments and modern connectors have pushed timber into real competition with masonry and steel for many types of structures. The very threat of timber grabbing off a big chunk of the normally lucrative construction business may change the current attitude of some producers of other materials.



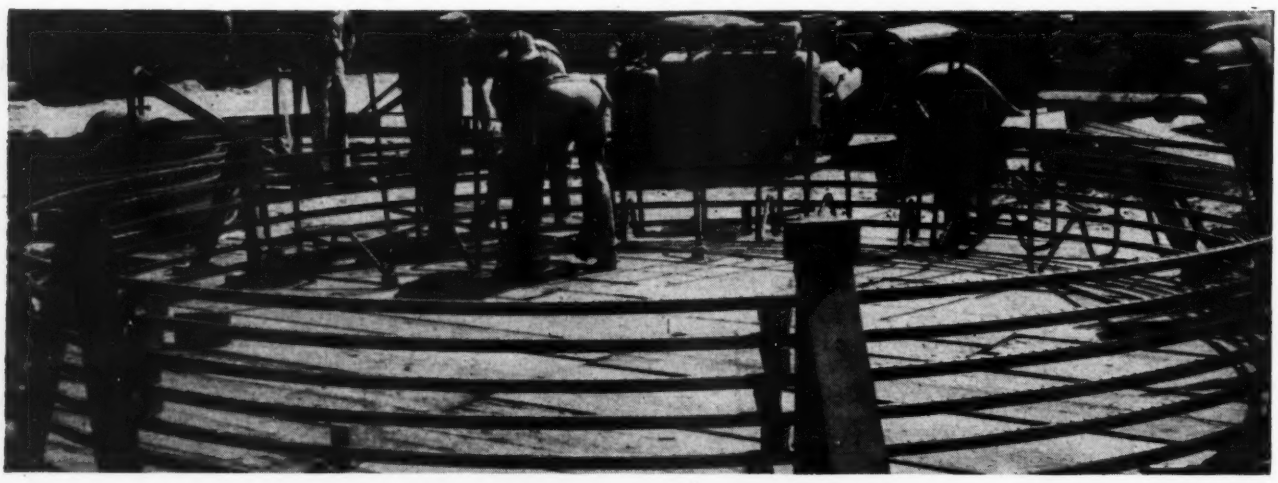


BIG 100-FT. SECTIONS for Los Angeles sewer outfall are built on shipways, launched and towed 30 miles to place. Here is completed section ready to launch from ramps lowered into water by winches. Units are bulkheaded for towing; box at left end adds buoyancy.

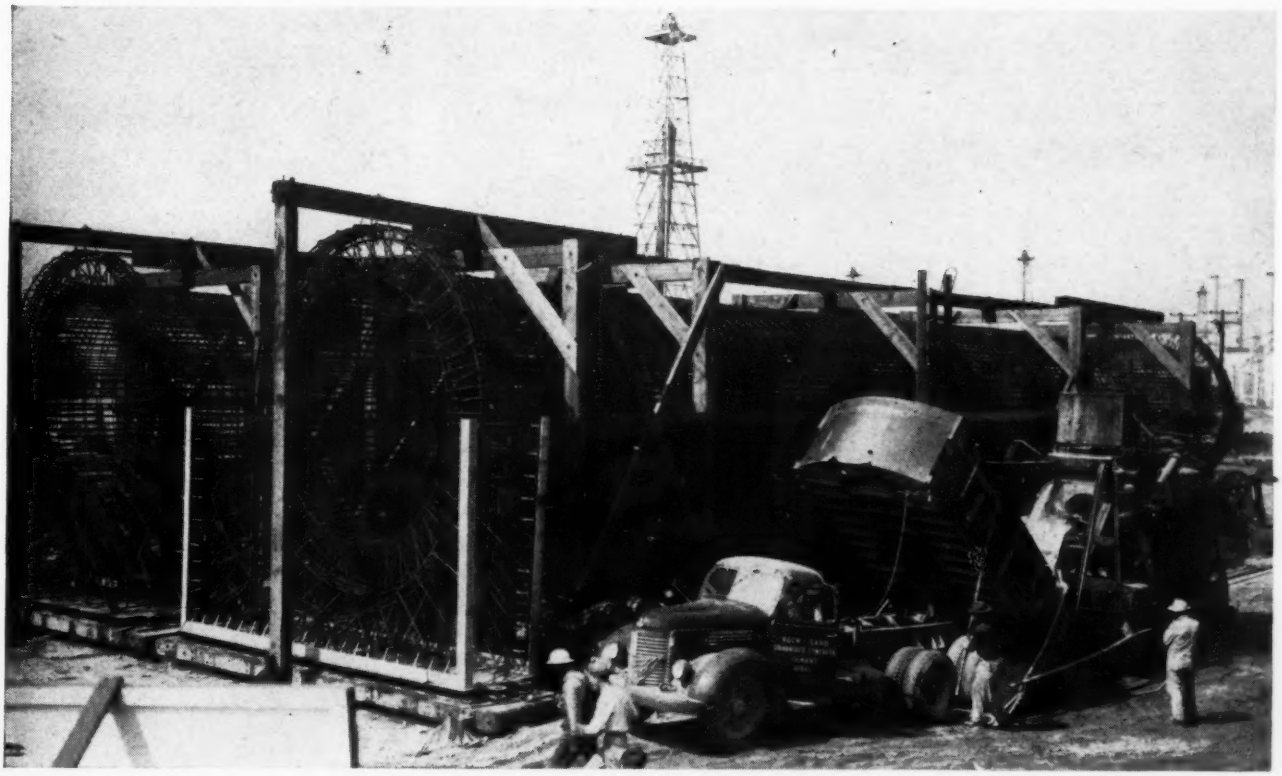
Sewer Outfall Precast on Shipways

PLANS for the Hyperion outfall sewer at Los Angeles called for 32 precast concrete sections 100 ft. long and 12 ft. inside diameter with a 14-in. shell. Heavily reinforced and carrying a 3-ft. connecting flange at each end, the sections weigh 455 tons apiece.

The contractor, Guy F. Atkinson Co., decided to cast the sections on shipways on shore, launch and then tow them to place. They had to go 30 miles to Long Beach harbor, however, before they found suitable yard space fronting on water deep enough to launch the units. Just before the launching, the ends were closed off by bulkheads and a flotation tank



CONSTRUCTION of sections started with fabrication of reinforcing rings into cages.



22½ TONS OF REINFORCING go into each section. Here are a couple of reinforcing cages assembled on launching ways before being encased in forms.

was added to make the sections sufficiently buoyant for the 30-mile sea trip.

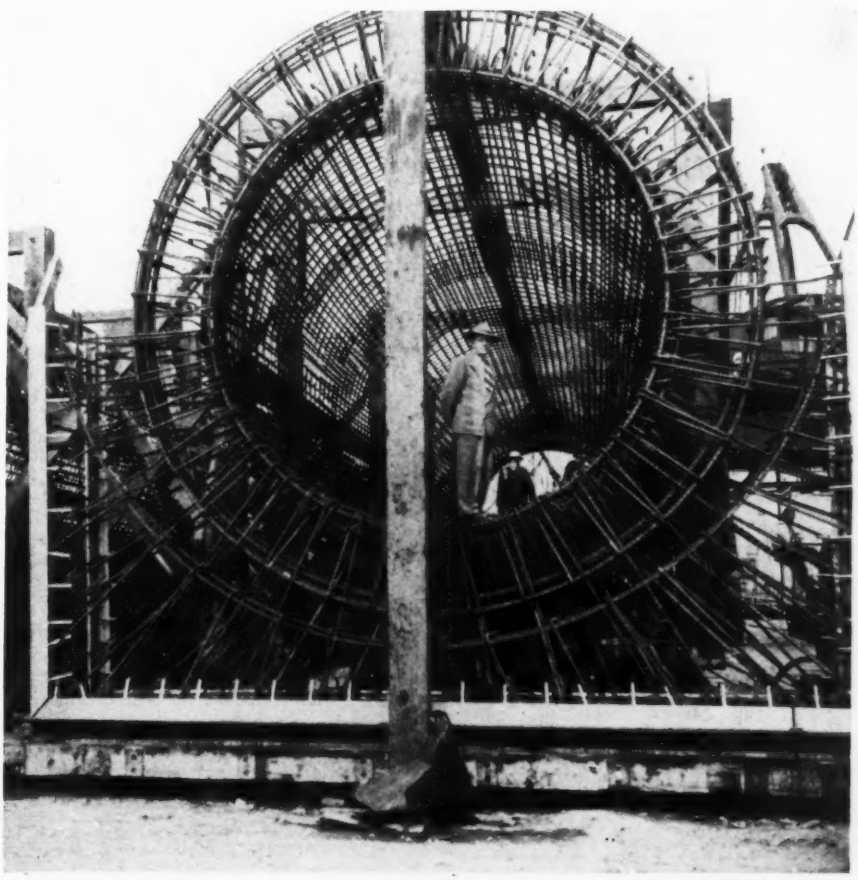
Two sets of ways were built at the casting yard, each accommodating four units in transverse position. The yard was served by a big traveling gantry crane whose long boom could place steel and concrete anywhere on the ways.

The 45,000 lb. of reinforcing for each section was prefabricated into cages by Bethlehem Pacific Coast Steel Co. After the cages were erected on launching skids, both inner and outer steel forms were placed around the reinforcing. Inside forms were 12-ft. steel tubes 100 ft. long, handled by a mandrel. Outside forms came in sections containing ports for concrete placing.

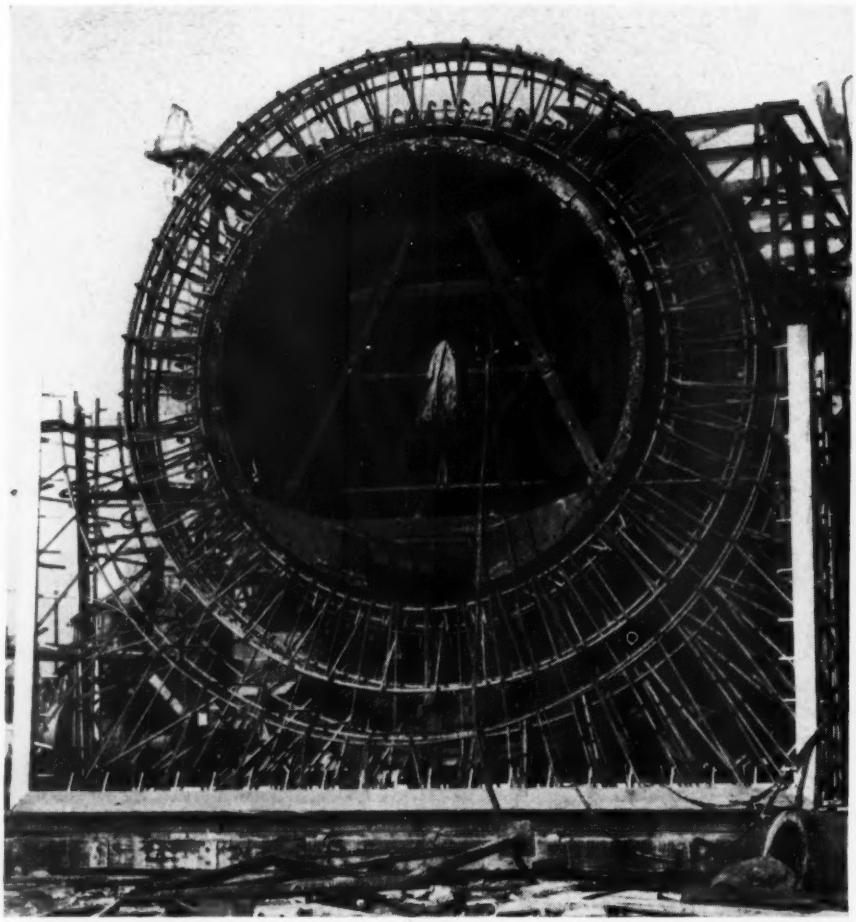
External vibration with 18 Viber electric vibrators with 18-in. flexible shafts was required because of the maze of reinforcing. These were equally distributed, nine on the inside and nine on the outside forms. As the vibrators had to be moved frequently, a crew of 12 men was needed for concreting operations. A total of 90 vibrator clamping brackets were built into the forms.

A Ransome dual-drum paver mixed the 220 cu.yd. of concrete for each section, placed by the gantry crane with a Gar-Bro bucket. Each pour took about 8 hr.

The launching ends of the ways

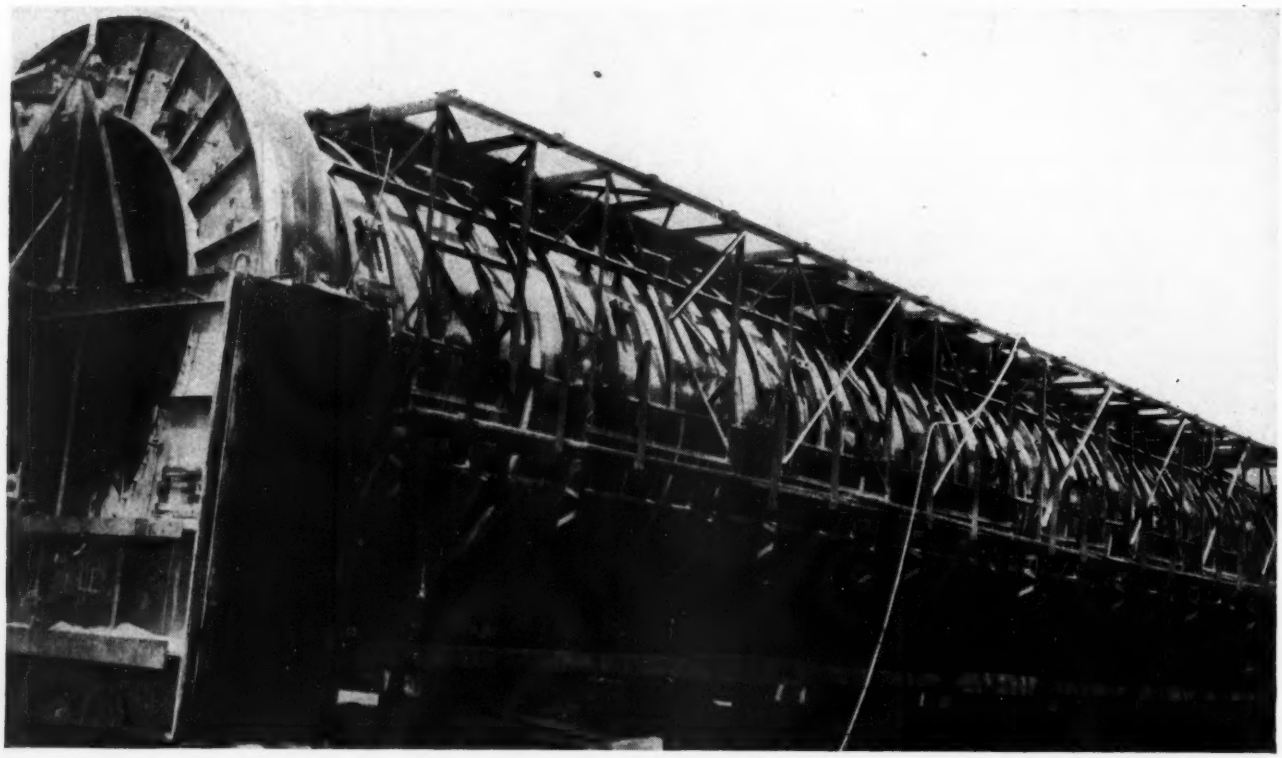


INTRICATE DETAIL of reinforcing is shown by this head-on view. One end of section flares out into support saddle.

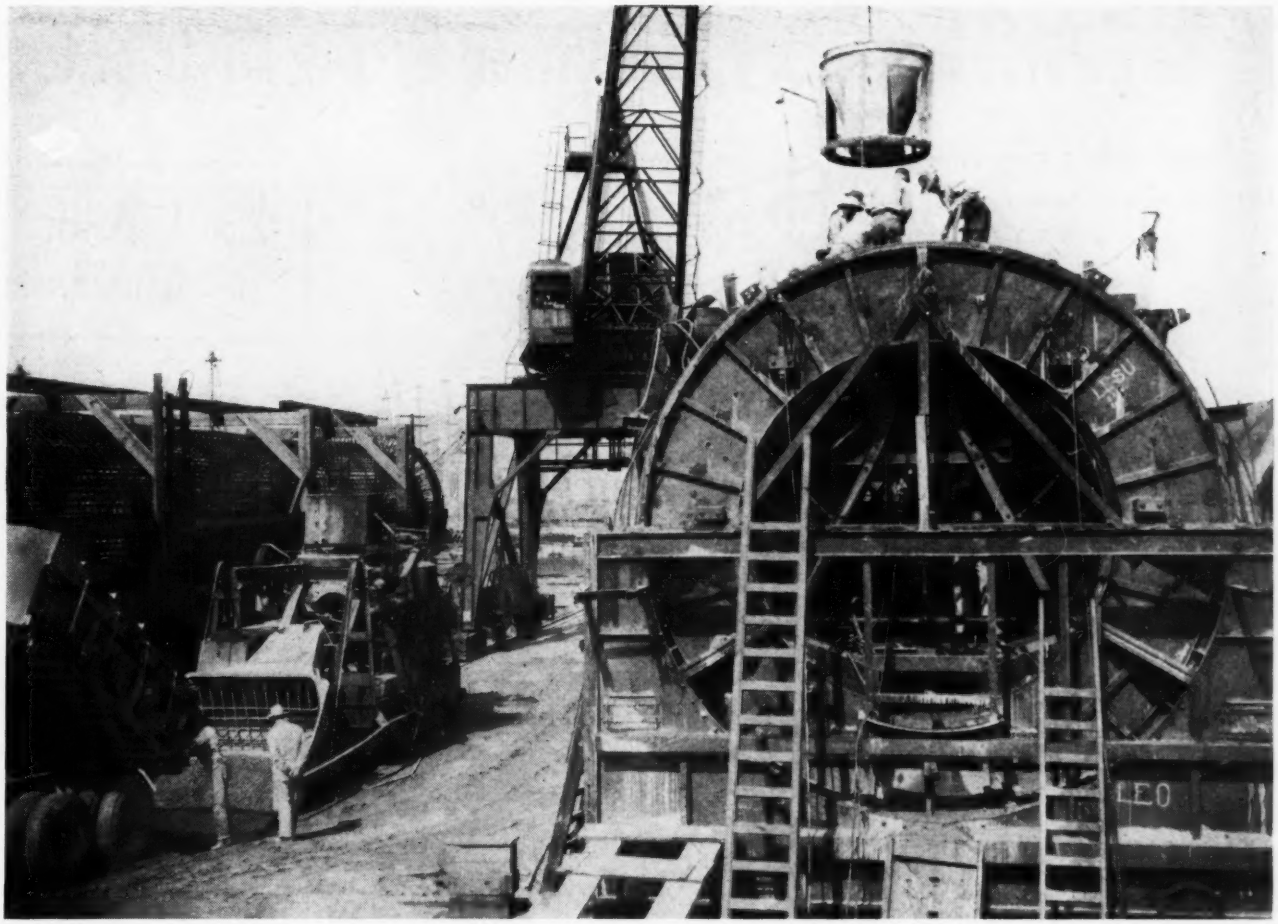


INSIDE FORM is collapsible one-piece steel tube 12 ft. dia. and 100 ft. long. It is handled into and out of reinforcing cage by long center mandrel.

NEWLY-LAUNCHED section is ready for 30-mile tow to outfall location.



OUTSIDE FORM is equipped with ports for receiving concrete from crane and dump bucket. Note channel brackets to which external vibrators can be clamped. There are 90 such brackets in inner and outer sets of forms.



CONCRETE IS MIXED in dual-drum paver, then is hoisted to ports in outside form in bucket handled by long-boom gantry crane.

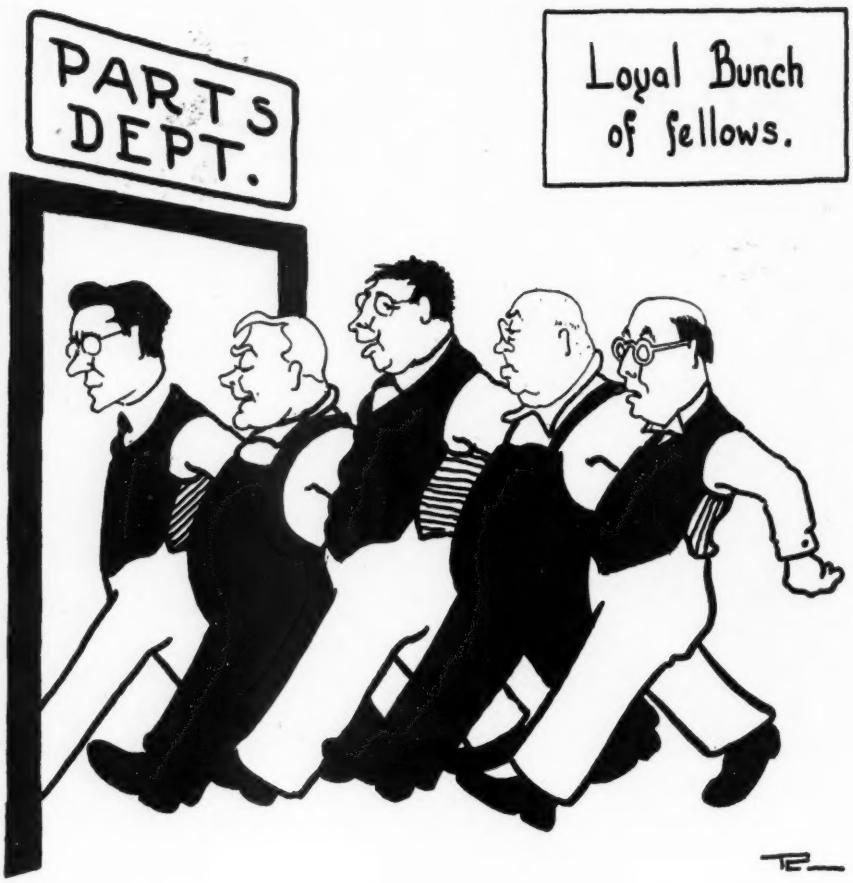
were carried out over the water on a ramp that could be lowered by winches. Thus, the sections were gently dropped into the water instead of sliding off the ways.

This pipe-casting work was part of a $3,517,410 contract awarded by the city of Los Angeles to the Guy F. Atkinson Co. for construction of the outfall. D. E. Root is vice-president and chief engineer in charge of the southern California area for Atkinson, John J. Morton was project manager, Philip N. Fletcher was project engineer and C. H. Thompson was superintendent of the casting yard. Anthony C. Meehlis held a subcontract for placing reinforcing steel. The project is under the supervision of Lloyd Aldrich, city engineer. Wikoff is chief inspector.

A LOG placed in the bucket of a Northwest shovel is used by K. F. Jacobsen & Co., Portland, Ore., contractor, to trim loose rock and other matter from high slopes on highway work. This work is on the Oregon City-New Era section of the Pacific Highway where both rocks and logs are plentiful. The device is the brain-child of Jack Harrington, superintendent for the contractor, and, according to Oregon Highway Department officials, it is very effective.

Taking Parts Inventory Simplified by Big Distributor

JOHN E. EGAN, Comptroller
H. O. Penn Machinery Co., Inc.
New York, N. Y.



TAKING INVENTORY of construction equipment repair parts and supplies is an annual headache to many a distributor and large contractor. Yet, with more than one million items involved, H. O. Penn Machinery Co., Inc., New York and Connecticut distributors, has worked out a simple, fool-proof procedure for a complete inventory that can be taken over any week end, without waiting for the close of a fiscal or calendar year, or even the last of the month. As an example, the Penn Company took inventory at its four branches last winter as follows: Mineola, Nov. 21-23; New York City, Dec. 12-14; Newington, Conn., Jan. 9-11; and Poughkeepsie, Jan. 30-Feb. 1.

To do this, the Parts Department was closed only from 1 p.m. on Friday, and by the following Monday morning it was ready for business with a minimum discomfort to customers. In every case a complete inventory was posted to stock record cards, all counts verified against the card balance at the time of actual physical count, all differences of $5 or more recounted independently and listed and all location errors adjusted so that the cards and the stock were in complete agreement.

There was no problem of working nights, no problem of reconciling sales made during inventory taking and no problem of posting count sheets on to stock record cards, with the resultant possibility of errors. Thus, there was no working of parts' men long hours at night and then expecting them to continue business as usual during the following day, and no problem of closing the Parts Department down longer than Friday afternoon and Saturday.

The only requirement is that stock record cards show the bin locations of the parts. With this information, a good right-hand man for an assistant, and a loyal bunch of fellows willing to pitch in and get the job done, you can take any type of parts' inventory. At our place all stock record cards are kept on a Wheeldex file. Whether this method would work on any of the other visible type card systems depends upon the ease with which the cards are replaced on the files.

Assuming your stock record cards are complete with bin locations (worth considering if not the case), the first thing is to consider the manpower (and womanpower) angle. All available personnel including salesmen and office help, both male and female, can be used Friday afternoon, since the initial phase is largely a sorting operation: (1) Stripping cards from wheels or files; (2) numbering cards with a Bates or Roberts numbering machine, and (3) stamping the cards with the date of the inventory.

Here, great care must be taken to keep the cards in the same order in which they are removed from the files and number them immediately. Then handling and putting the cards back on the files will be simple, for at all times the numbers will be a control on the cards being handled. Teams can be used on this operation, three persons to a wheel or file—one stripping, one numbering, and one dating. Any number of teams can work simultaneously by using an even thousand number at the start of each wheel or file for the number control.

The date should be stamped on the next blank line immediately after the last posting on the card, so placed that the quantity will fit in alongside of the date and in the "Balance" column. Also, it is advisable to have three or four numbering machines available to prevent a bottleneck on this phase of the operation. We use four numbering machines.

Next sort the cards out according to section or location number, and here a large table 15 ft. or 20 ft. long is a great aid. Planks on horses covered with clean wrapping paper is a suitable table. Section locations can then be marked on both sides of the table and the cards sorted accordingly.

At this time, cards are sorted only by main section locations according to your section lettering or

SOURCE OF SUPPLY

CARD NO 1442

STOCK RECORD CARD
H. O. PENN MACHINERY CO. INC.
WHEELDEX FORM NO. 60447-2

MINIMUM QUANTITY: 4 | NON RETURNABLE:

1947 MO	DAY	REFERENCE	ON ORDER	RECEIPTS	DISB.	ON HAND	TOTAL SERVICE	1947 MO	DAY	REFERENCE	ON ORDER	RECEIPTS	DISB.	ON HAND	TOTAL SERVICE
		BALANCE FORWARDED				6		8	5	E418		2		2	
1	3	13874			2	4	2	8	5	18892			2	0	10
1	4	D54	X					8	15	D84		6		6	
2	10	14315			2	2	4	9	10	D87		2		8	
2	14	J4571			2	0	6	11	23	19571			2	6	2
2	14	D60	X												
2	18	D54		4		4									
4	3	D60		4		8									
4	10	15781			4	4	4								
4	12	D70	X												
5	15	D70		4		8									
7	15	17910			6	2	6								
7	18	D84	X												
8	1	J5516			2	0	8								
8	3	E418	X												
8	2	D87	X												

DEC 13 1947

PART NO. 2A1223 | DESCRIPTION Sleeve | DEALERS NET PRICE $ 2.93 | CONSUMERS PRICE $ 4.01 | LOCATION B 185

PARTS RECORDS are kept on Wheeldex system cards by H. O. Penn Machinery Co., Inc. Card shown here is for stock records, and is basis for annual inventory taking, given a special number for that purpose. Part number, description, cost and selling price and bin location are kept on this card along with running inventory. Date of annual check and count number agreeing with last running entry indicates this item is under control.

numbering system. Perhaps some cards that are used for "ins and outs" without location designation will show up. If so, they should be kept together and not processed along with the others.

When the cards are two-thirds stripped from the files, part of the force should start breaking down section card piles into bin locations. For example, take all of Section A cards that have been thrown out up to this point, and start putting them in order starting with A-1. If more than one item is located in the same bin, simply put all of the cards marked A-1 together, all of those marked A-2 together, etc.

The numbering of the bin sections in the H. O. Penn stockrooms starts in the upper left-hand corner with bin No. 1 and continues along to the right. Thus, when section cards are in bin order, the workers can then start at the top left-hand corner of the section and work on down through the bins. Should your bins start with the high number on top, reverse the procedure and have your section cards in order, with the high bin number first, working down to the end.

This operation starts at 1 p.m. on Friday, with office girls assisting in the sorting and stamping operation. If the sorting operation has been completed early enough on Friday, it is possible to start the physical count that same day.

Matching the teams before starting actual count is advisable. Two men form a team; one experienced

Stripping Cards from Files.

in handling and recognizing parts, the other preferably should be an office employee or salesman, as his duty will be to record the count on the cards. Before starting counting, it is well to brief them for a clear understanding of the counting procedure, as every item in every bin in each section must be counted and the count recorded on the card. The counter starts with bin No. 1 and calls out the part number, description, and quantity of each part. The recorder marks down the quantity, using a colored pencil, in the "Balance" column, alongside of the date. Where the count is in agreement with the card, no further checking is necessary. But if the count differs from the card record, the recorder asks the counter to recheck without revealing the quantity on the card. If the difference still persists, the double-checked count is then accepted and put down on the card in colored pencil.

Should a part be found without a corresponding card, a blank card should be written up by number, description, location, and count. This card is then kept to one side, and the count continues. If an unidentified part is found, and the description and part number can be ascertained from the card, the part should then be properly tagged. In this way, as you go along, every part in the bins is properly tagged and located according to the card.

If an unidentified part cannot be matched with a card, it should be removed. These parts are later reviewed by your best parts and service men to properly identify them. Then the parts are subsequently put back in the bins and adjustments made on the cards. Any parts that can not be identified, should not be put back in the bins but either left in a miscellaneous heap or scrapped, as they can be of no use to anyone in the regular parts bin. Don't overlook parts stored on top and at the sides of a section, for they must all be counted and recorded.

At this stage every part in the section is now recorded on a stock record card. Items may be found in the wrong bin, if so they must be transferred to their correct location. Be careful to remove the card that may have been made up at the time the part was discovered and to correct the count on the stock card to insure accuracy of the inventory.

You can now start your teams on the actual counting, equipped with a supply of blank cards that have been date stamped, a supply of colored pencils (preferably red or blue), and some tags for identifying parts that are not tagged. Assign crack teams to the toughest sections first so that the hard jobs are started while your men are fresh and alert. Use inexperienced teams on easier sections, such as

Numbering Cards.

gaskets and simple small parts. Caution your men to watch boxed parts as boxes may contain varying quantities. They must learn to look for the quantity on the outside of the box and not simply accept the box as containing only one of an item. Do not start two teams in the same aisle as this might cause misunderstanding in calling counts.

Keep a master scoreboard of section locations and list the teams assigned to each section. As a section is finished, it is marked off and the completed cards put on the large table off to one side. Keep your teams going until a complete count of all sections and all locations and all parts has been taken. When this operation is about two-thirds through, some of your less experienced teams can start throwing completed cards out into numercial order. By putting a new marked-off cover on the long table, cards can be sorted into groups of 1,000. Here again, don't be afraid to break up teams where you can get a more effective count and use the less experienced employees on sorting cards. It is not necessary to wait for the complete physical count before starting sorting back the cards into numerical order. Also, as part of the sorting operations, the main groups of 1,000 in turn can be broken down by hundreds and tens, so that they will be in straight numerical order.

Blank cards made up as the inventory count progressed should now be accumulated and put in the same type of order that the inventory files were. Then the best office detail men should look over the cards, taking the two groups together, that is, the group of cards which are in numerical order according to the number previously stamped on the cards, and the group of blank cards which have been made up by the counting teams. Here, each man should be furnished with a couple of runners, men who know the parts and their location. When two cards are discovered with the same part number, it indicates that there are two locations for the same part. The runner should take both cards, go out to the location shown on the newly made up card, and transfer the parts to the location shown on the original card. The count shown on the original card should then be increased by the count that had been shown on the second card, and at this point, the second card and the original returned to the party who is checking the cards, and he will see that the second card is destroyed. Where the checker discovers a new card that has been made up and there is no original card, indicating that apparently a card had never been made up for this part, it should be given to a

Dating Cards.

runner to re-check the part, confirm the fact that it is a "good number," correctly described, acceptable to put in stock as an inventory item.

Also, the checker in going over the cards should watch for differences between the balance on the original card and the amount posted as the inventory count. We use a $5 net cost as the basis for rechecking differences. This means that, on any card where the unit cost or aggregate amount is more than $5, the difference is rechecked by runners, both overages and shortages.

If the runner cannot adjust the difference, the cards are given to another person for listing. A schedule is prepared in duplicate, with the information: Card Number, Part Number, Description, Card Balance, Count Difference (over or under) Unit Cost and Extension. Then the cards are refiled back in order, and are now ready to be put back on the files. The cards should be scanned before filing to see that each card is accounted for, the stamped number on the card being the control governing all of the cards that were originally on the files.

Notice should be taken of the ease with which the cards can be put in the same order as they were removed from the files, regardless of the method of keeping the stock record cards. By putting them in straight numerical order, they are ready to be returned to the files, and no knowledge of the order in which they are kept is necessary.

If you do not have a history card or some other type of record that accompanies your stock record card, it is relatively simple to return the cards on to the files. If, however, a history card is used, it is necessary to have a matching operation before returning the card and the history card to the file.

In effect, the inventory has now been completed. Every card has been removed from the files, checked against the location bins, and the count duly recorded thereon. All count differences have been verified, differences have been listed, and the cards placed on the files. At this point, you are in business again, ready to sell and receive parts, and record all transactions on your stock record cards.

The differences can be checked at leisure by the Accounting or Parts Department, or a combination of both. The list was taken in duplicate and should you desire to have your Parts Department work on it, the Accounting Department can still keep the master control and check any card errors as are subsequently found. Here again, the type and quantity of differences should determine the amount of work spent on attempting to run them down. This list will often aid those who are working on differences, as the description of the parts is given and a shortage of one type of part under one number may be accounted for by an overage of the same type parts, only under a different part number. Many offsetting errors are thus accounted for. It is also well to check first the mathematical accuracy on the cards, as possibly a number of errors may be caused by faulty arithmetic.

Here are a few important steps. When you decide on an inventory date, put a notice up in your Parts Department and notify your customers by postcard if you care to, so that they may obtain required parts while you are closed. The same thing holds for your Service Dept.; they should withdraw all necessary parts prior to the start of the inventory.

See that all postings are up-to-date before starting to remove the cards from the files. Where a large stock order is received too late to

A Team.

Briefing a Team.

put the items away in time, simply hold the entire shipment separate and away from the general stock taking. Of course, these items should not be marked on the stock record cards as incoming.

Be sure to take a total of open jobs in the shop that have had parts charged to them. These items, although posted against the stock record cards, are still part of the inventory.

Inventory control is usually established at the end of every fiscal or calendar accounting year. To obtain a control figure at any subsequent month end, simply add the month's purchases and deduct the cost of sales to arrive at an end-of-the month control figure. These figures are obtainable monthly from the general ledger. Accordingly, having established a control figure as at the end of the month prior to the week end on which the inventory is to be taken, all that is necessary is to bring the control figure up to the date of inventory. This is accomplished by having all invoices covering parts purchases marked in red when the parts are physically taken into stock *after* the inventory.

By analyzing the purchases for the month in this way, the amount of purchases prior to the inventory can be determined, and this amount would represent the purchases to the date of the inventory. All parts' sales invoices are broken down into two groups—those sold prior to and those sold after inventory. It is easy to analyze these and determine the sales prior to the inventory date and cost of same determined accordingly. Adjustments should be made if there are any branches, to see that the transfers are properly recorded.

After differences have been checked and satisfactorily explained, the inventory is now ready for listing. Here, outside help may be used in extending the cards either on comptometers by taking two separate runs, or by adding machine tapes. Either method is satisfactory, and if there is no great rush for the figures, the employer's own personnel may be used to take off this information. This can be done during working hours with slight inconvenience to the Parts Department or may be done during the evening. It is well when totaling the cards to take totals by groups, either by manner in which the cards are grouped, or by every couple of hundred cards, in accordance with the inventory number stamped on them. The point is to take the totals in short groups rather than an entire file at a time, as this facilitates any rechecking of totals.

The workers must eat. Arrange to serve coffee and cake during the morning and afternoon but for lunch take them out to a restaurant. It is advisable to take them to an outside restaurant thereby breaking up the monotony. Then they can work through to about 9 p.m. without dinner by having coffee again around 7 p.m. Taking them out for dinner requires too much time, and besides, the crew gets restless and is not happy about coming back to work. Of course, any of your men from out of town will need hotel rooms.

Working from 1 p.m. to 9 p.m. on Friday, getting an early start on Saturday at 8 a.m., and working again until 9 p.m., will result in folding up the job by 6 or 7 p.m. on Sunday. While this may seem like a lot of work, if what has been accomplished is considered, the total will not seem excessive.

Keep everyone busy. Do not hesitate to break up teams if necessary to get men that are adaptable to a particular type of job. There is enough card sorting to keep everyone at work. One idle man can cause a great deal of trouble wandering around talking to counting teams.

All hands must be made aware of necessity for proper care of cards. Cards may be carelessly left in the parts bins, and constant care is necessary to keep all cards under control at all times. A numerical control is kept, yet any loss of the stock record cards could cause considerable inconvenience. Accordingly, keep reiterating to everyone that the utmost care must be used in the handling of the stock record cards.

Have one or two men in complete charge of all operations. It is best for him or them not to try to take active part in any of the inventory taking, as merely being available to hand out the work, to see that all teams are functioning smoothly, answering questions, patrolling the aisles, and so forth, is at all times necessary for a smooth-running inventory.

Now relax and forget inventory taking for another year.

HARRY A. DICK

QUIET, SOFT-SPOKEN, easy-going and unassuming—you would never size up Harry A. Dick as a successful Western contractor at first glance. Yet his mild and gracious manners belie his construction ability and experience, for he is president of Gilpin Construction Co. of Portland, Ore., and executive vice-president of General Construction Co. of Seattle. These positions place Harry among the elite of Northwest contracting, for up there Gilpin and General are names revered as highly as are Lowell and Cabot in New England.

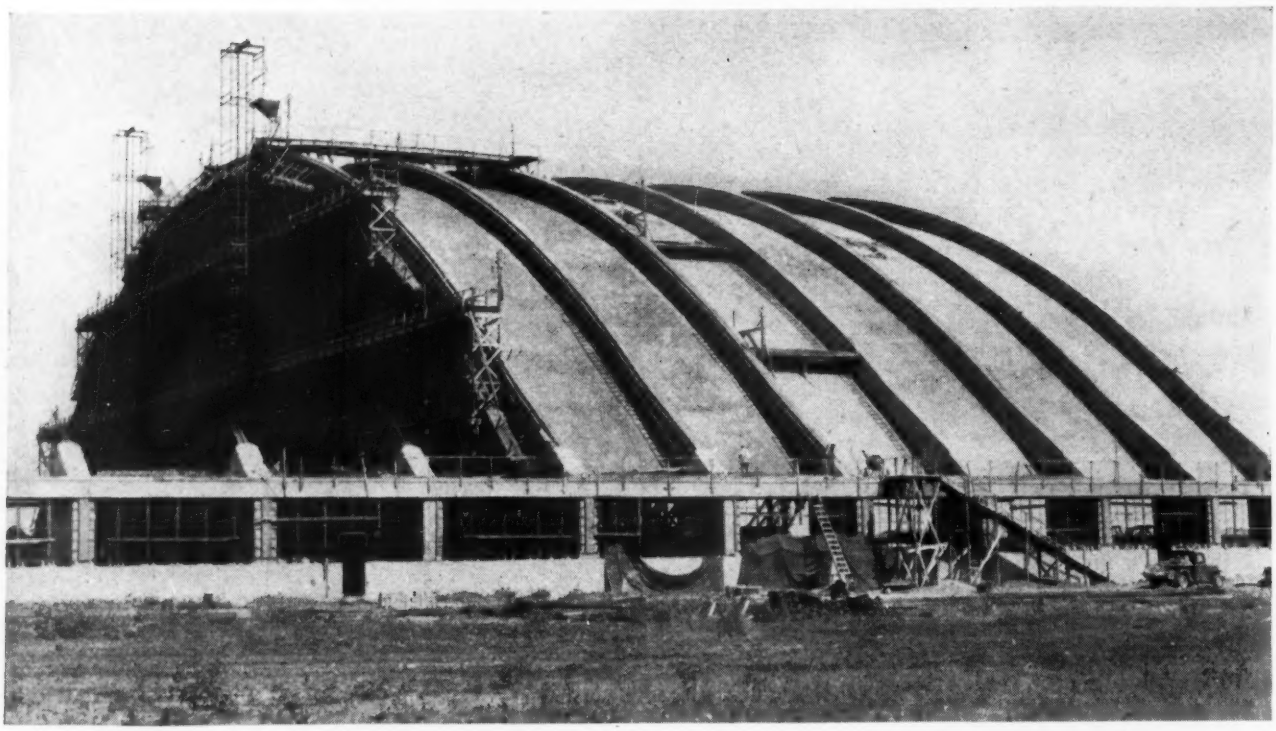
Harry Dick was born in Chicago in 1888. In 1906, upon completion of high school, he decided to tie up two yearnings in one package —to go West and to get into construction—by landing a job with the engineering and construction department of the O.W.R.R.&N. Co., now part of the Union Pacific R.R. For the next 12 years he was on railroad and bridge construction throughout the Northwest. He says his experiences and training under the railroad men and contractors of that period served as a gruelling substitute for a technical college course.

He must have learned well, for in 1918 Jack McEachern of General Construction Co. enticed him away from the railroad and into the contracting business on a big dock job in Portland. In 1919 the young contractor jumped up another notch in the construction world by organizing the Gilpin Construction Co. with Jack F. Gilpin, opening an office at Astoria, while still retaining his connection with McEachern. They moved the Gilpin office to Portland in 1921. Since Jack Gilpin's death in 1931, Harry Dick has been carrying on as head of the company.

Harry has taken an active part in contractor association affairs ever since 1920 when he helped organize the Portland Chapter, A.G.C., a year after the national association was formed. He has served as president of his local chapter, as training for the big job as A.G.C. national president in 1945. As vice-president the previous year he was busy, in addition to his own company war construction contracts, keeping the construction forces of the nation mobilized for war work. As A.G.C. president at the end of the war, Harry was prominent in the move to get the country and its contractors back to peace-time construction.

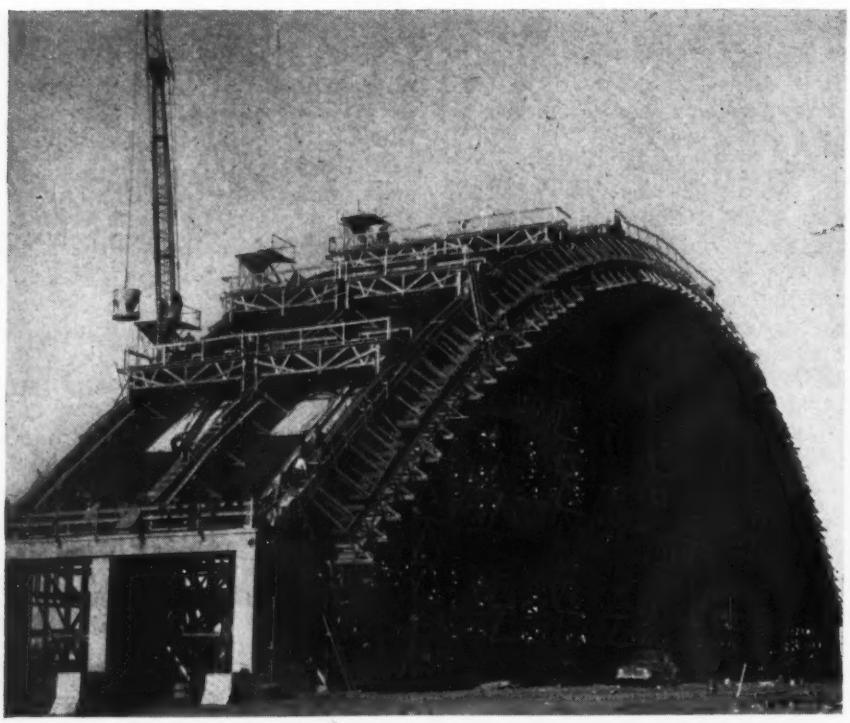
Both the Gilpin and General firms, individually and in joint ventures, did a lot of war-time construction. General is now at work finishing up the third stage of Ross Dam on the Skagit River in Washington, one of the most isolated construction jobs under way in this country. They are also sponsors of the recently awarded Hungry Horse Dam in Montana—of exceptional interest to the successful bidders because of their belief they can build it for some $9,000,000 cheaper than the next bidder.

But it will take more than Hungry Horse Dam and its low bid to ruffle the traditional calm of Harry Dick. Through war and peace, through city work and wilderness pioneer projects, through good construction times and bad, he carries on with a winsome smile, and gentle manner, yet with uncanny good judgment and sound counsel. Harry Dick is more than a good contractor; he is a gentleman of the highest order and a most lovable character to boot.



AT DAKOTA AIRBASE, elevators in pipe scaffold towers lift concrete to three levels to pour arch ribs and thin-shell roof of huge hangar. At two lower levels, concrete from hoist is buggied along bridges across face of arch centering; thence to longitudinal runways for chuting to place. Here, side runaways have been removed so centering can be rolled ahead for next 50-ft. pour.

Pouring Biggest Concrete Hangars



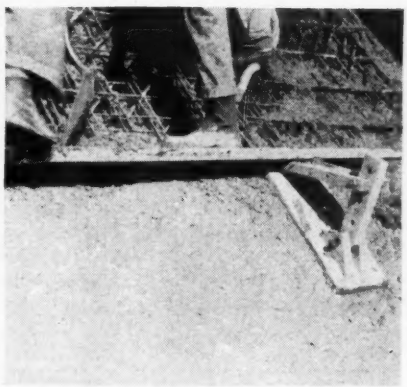
AT MAINE AIRBASE, cranes with 120-ft. booms and 25-ft. jibs lift 1-yd. buckets of concrete to make pour from four levels on each side of arch hangar. From 3-yd. hoppers, buggies carry concrete over ramps spanning 25 ft. between arch ribs. Fastest time for making 630-yd. pour is 15½ hr.

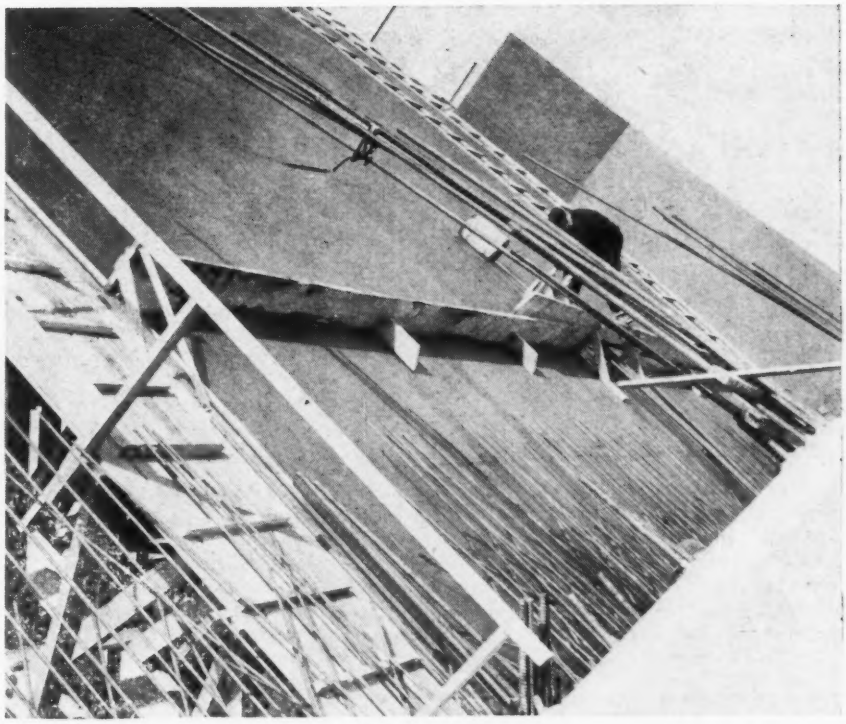
AS MAINE GOES, so goes the nation? In politics, perhaps. But not in methods of pouring the world's two largest long-span, thin-shell concrete hangars for U. S. Air Force bombers at Limestone, Me., and Rapid City, S. D. Although the hangars are similar (340-ft. clear span, 314 ft. long, 90 ft. high, 5-in. shell), contractors on the Maine project voted to lift concrete with a pair of Lima crawler cranes while two fixed elevator hoists were elected for the job in Dakota.

Other successful Limestone candidates are plywood forms, high-early-strength cement, and two highway pavers as concrete mixers. The ticket at Rapid City includes forms of diagonal wood sheathing faced with Masonite, ordinary portland cement, and concrete from a Mixermobile as well as from ready-mix trucks hauling from a nearby plant. Heading the slate of both parties is a rolling falsework or arch centering that weighs 500 tons and involves 280,000 b. ft. of timber.

Lane Construction Corp. and T. W. Cunningham Inc., of Brunswick and Bangor, Me., are building the Limestone hangar; Steenberg Construction Co., St. Paul, Minn., is contractor at Rapid City. Roberts and

Schaefer Co., Chicago, is architect-engineer for both hangars. The work is under the supervision of the Corps of Engineers, with the jobs being handled out of the New England Division office and the District office at Omaha.





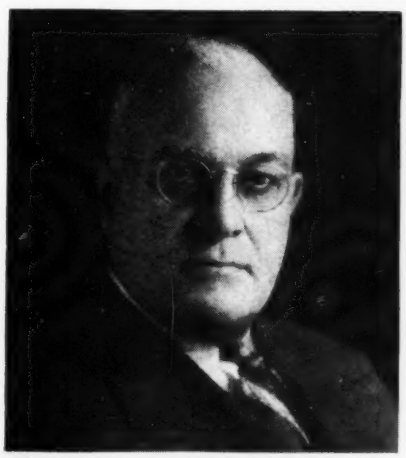
TO KEEP WORKMEN SAFE, contractors on both hangar jobs developed clever schemes. At Limestone, adjustable bench keeps work plank level (left) regardless of arch slope. Plank-supporting rail is hinged to base, which has strap iron hook in front to hold it to top layer of reinforcing mesh. At Rapid City, plank temporarily fastened to arch form (right) keeps men from spearing themselves on projecting abutment reinforcing steel should they slide down form face.

Moles to Honor Oakes and Scott

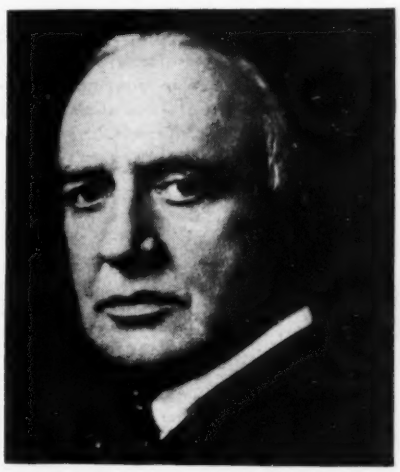
THE MOLES, New York society of tunnel and heavy construction men, have named Luther S. Oakes, Minneapolis, and Thomas A. Scott, New York to receive the 1949 Moles Award for outstanding construction achievement. Bronze plaques and award citations will be presented by Moles president J. Rich Steers at a dinner meeting next Feb. 9 at the Waldorf-Astoria in New York City.

Luther S. Oakes, who will receive the non-member award, has been president of Winston Bros. Company, Minneapolis, for 27 years. Born in Vermont in 1877, he went west, after graduating from Dartmouth, as a railroad construction engineer. He joined Winston Bros. in 1907, and has been with them ever since. He became a director in 1913 and president in 1921. The firm specializes in heavy construction throughout the Western Hemisphere.

Captain Thomas A. Scott, recipient of the member award, has been in construction all his life, and a contractor since 1903 when he organized the T. A. Scott Co. of New London, Conn., with his father in 1903. He was born in New London in 1877, and served his construction apprenticeship on lighthouse building, when he lost a finger at an early age, a constant reminder of hazards of construction. In 1922 he merged his company with Merritt & Chapman Derrick and Wrecking Co. to form the Merritt-Chapman & Scott Corp. of New York. After serving as president for many years he is now Chairman of the Board. His company specializes in marine construction and salvage, on heavy general contracting and in industrial building.

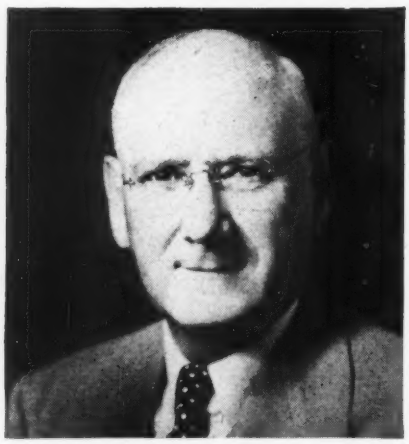


LUTHER S. OAKES

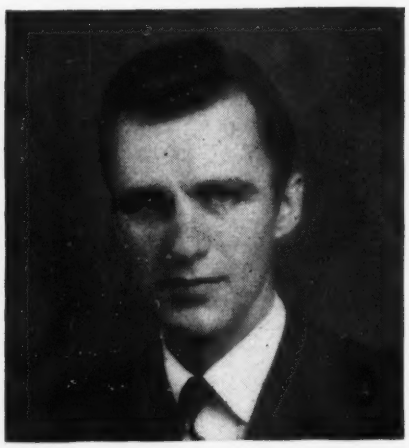


CAPT. THOMAS A. SCOTT

Present and Accounted For...A PAGE OF PERSONALITIES



NEW PRESIDENT of American Society of Civil Engineers for 1949 will be FRANKLIN THOMAS, professor of civil engineering at California Institute of Technology. He takes office at New York annual meeting next January. Iowa born and educated, he has been at Cal Tech since 1913.



UNUSUAL APPOINTMENT for a contracting firm is that of DR. EDWARD J. LAUTH, JR., as medical director for Dravo Corporation, Pittsburgh. The company announces the appointment intends to re-emphasize and reinforce the importance of safety, accident prevention and employee health.

WALTER L. COUSE, member of Executive Committee, Associated General Contractors of America and president of Walter L. Couse & Co., contractor of Detroit, Mich., has been appointed to Advisory Council of Senate Interstate Commerce Subcommittee on Trade Policies.

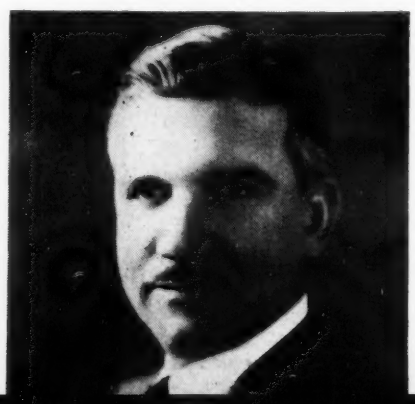
← TIME OUT from busy contracting duties is taken by DWIGHT W. WINKELMAN, prominent New York and North Carolina contractor and national president of Associated General Contractors to ride to the hounds at Geneseo, N. Y., fox hunt. Togged out in shiny black boots, red coat and silk topper, Dwight is as much at home on his famous jumper Renown as he is in a bidding battle, lining up a tough job or wielding the president's gavel.

GAIL E. SPAIN, vice-president of Caterpillar Tractor Co., Peoria, Ill., is on a three-month leave of absence to serve as Director of Agricultural Machinery Branch of Industry Division, Economic Cooperative Administration.

THURMAN C. TEJAN has been appointed staff member of Constructors Association of Western Pennsylvania to handle labor-management relations of association and relations with awarding authorities involving public works' specifications.

NEWLY CREATED ENGINEER DISTRICT at Walla Walla is headed by COL. WILLIAM H. WHIPPLE who will have charge of all Corps of Engineer activities in Mid-Columbia and Snake River Basins, including the $227,000,000 McNary multi-purpose dam on Columbia River.

NEW SUPERINTENDENT OF PUBLIC WORKS for State of New York is B. D. TALLAMY, of Buffalo, N. Y., succeeding Charles H. Sells, who resigned to return to private engineering practice. Mr. Tallamy joined the department in January, 1945, and in 1947 was promoted to Chief Engineer.



Both Need The Right Union For Best Results

No removable rock bit can be better than its union, whether it's deep-hardened steel or carbide insert. Even Timken bits would not yield the outstanding performance that is built into them without the Timken union with one-piece, solid steel shoulder construction; neither would they last as long.

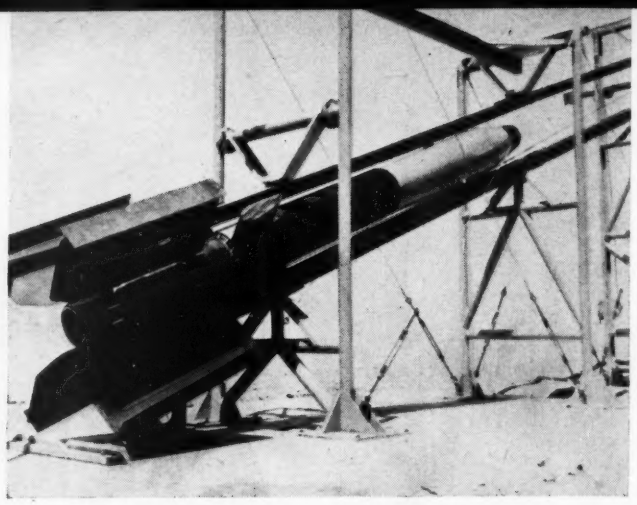
The Timken union saves the bit and steel threads by taking the drill impact on the broad, flat machined shoulder of the steel. It increases drilling speed by distributing the hammer blows evenly over the cutting edges of the bit; this also enables the bit to retain its gauge to the limit of its useful life.

The Timken union is a single solid piece of steel — nothing to loosen up under the shock of the hammer blows no matter how hard the rock may be.

The Timken bit and the Timken union are made for each other. There is no other way to obtain Timken rock bit performance.

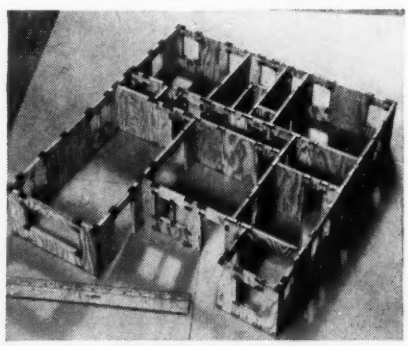
THE TIMKEN ROLLER BEARING COMPANY, CANTON 6, OHIO - CABLE ADDRESS "TIMROSCO"

Job oddities



FOR LAUNCHING JET-PROPELLED ROCKETS in tests by U. S. Navy Department, steel frame is erected at Inyokern, Calif., on lakeside sloping seamy rock base which was solidified by grouting methods described in "Construction Methods," November, 1947, p. 94. Here's a structure for novel purpose of sending on their way "flying stovepipes" to travel at supersonic speed. Wide World Photo

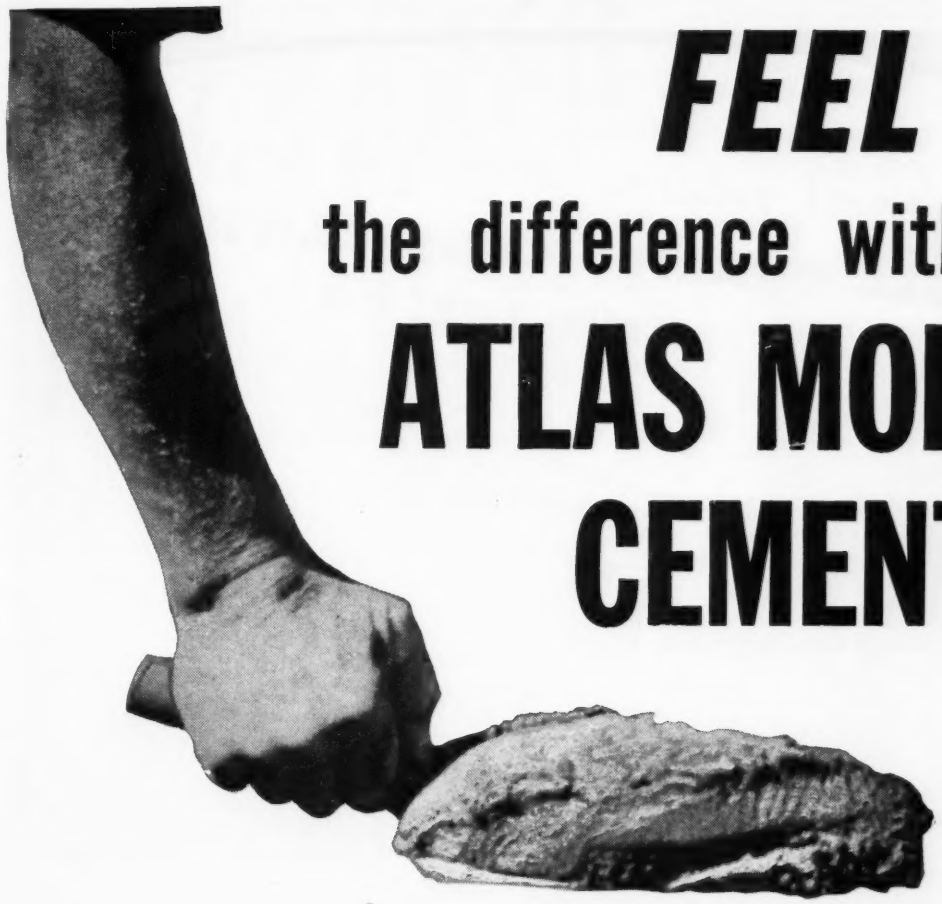
BUILDING FROM THE TOP DOWN. When Mountain States Tel. & Tel. got in a hurry to install equipment on third floor of new Phoenix, Ariz., telephone exchange, Del E. Webb Construction Co. accommodated them by finishing up top floor first.



BUILDING HOMES IN MINIATURE is now a possibility by use of 270 notched plywood blocks cut to ½-in. scale and put together with spring clips to form rooms which may be rearranged until satisfactory floor plan has been obtained. Billd-Yur-Plans of Bonita, Calif., maker of sets, claims 2,000 different floor plans up to 1,600 sq.ft. may be made with them.

BIGGER DIGGER. Bucyrus-Erie 1150-B walking dragline (below) owned by International Mineral and Chemical Corp. weighs 2,000,000 lb. and is equipped with 20-cu.yd. bucket operated from 215-ft. boom, for stripping phosphate in Peace Valley, Florida.

CONSTRUCTION EQUIPMENT BEHEMOTH (below) is this 19½-cu.yd. Heil rock body (11½ ft. long and 8½ ft. wide) on Mack truck chassis powered by 275-hp. Cummins diesel engine. Driver Stanley Sniadach, himself a six-footer, (at extreme left) is dwarfed by towering height of truck body raised almost to vertical position by twin-cylinder Heil hydraulic hoist with 40-in. stroke.



FEEL

the difference with buttery

ATLAS MORTAR CEMENT

MORE AND MORE masons are telling us they like the smooth, even way Atlas Mortar Cement responds to the trowel. Right at their first experience with this satiny mortar, their skilled hands can "feel" the ease of handling its rich plasticity. And masonry contractors praise its strength, durability and satisfactory yield, its color and exceptional water retention.

Backed by years of research, Atlas Mortar Cement complies with ASTM and Federal specifications for masonry cement.

For further information, write Universal Atlas Cement Company (United States Steel Corporation Subsidiary), Chrysler Building, New York 17, New York.

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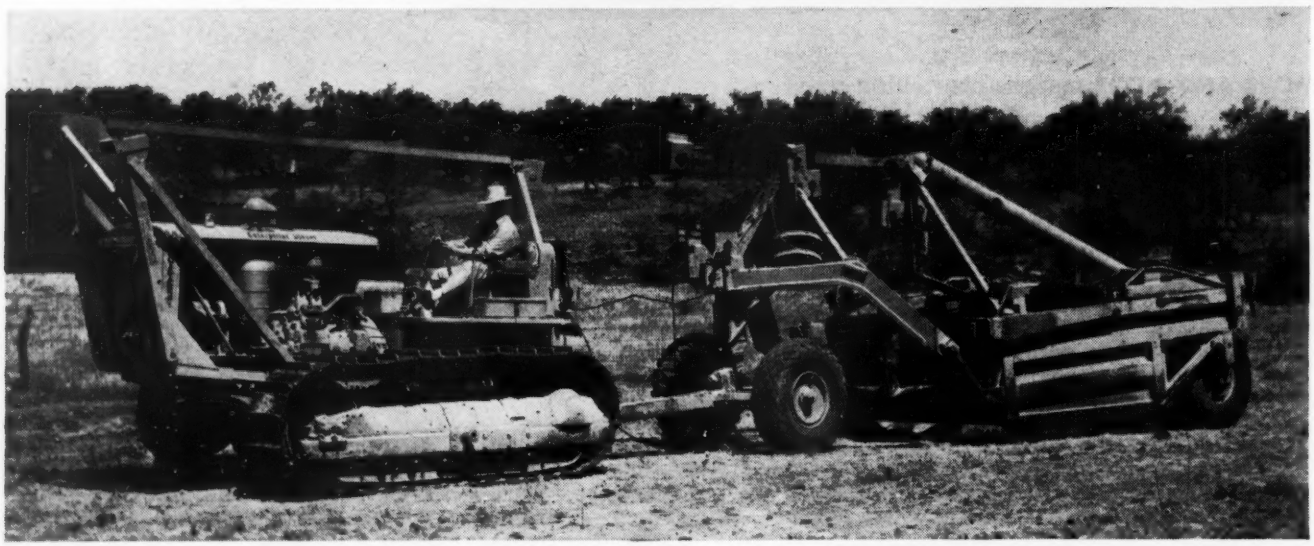
CM-MC-21

SKILLED HANDS PREFER

ATLAS MORTAR CEMENT

THE SATIN OF MASONRY CEMENTS

"THE THEATRE GUILD ON THE AIR"—*Sponsored by U. S. Steel Subsidiaries—Sunday Evenings—ABC Network*



F. M. Reeves and Sons is one of many leading contractors who have found that the use of Gulf quality petroleum products is one of the surest guarantees of smooth, dependable equipment performance and low maintenance costs.

Always of the same uniform high quality, Gulf lubricants and fuels work as a team to help contractors do a speedier, more profitable job. Gulf lubricants provide an extra margin of protection —and Gulf fuels insure maximum engine power and efficiency.

F. M. Reeves and Sons, Austin, Texas, recently completed the rebuilding of over 11 miles of U. S. Highway ※183 between Baird and Coleman in Callahan County, Texas. Gulf quality lubricants and fuels helped keep their equipment rolling smoothly and efficiently.

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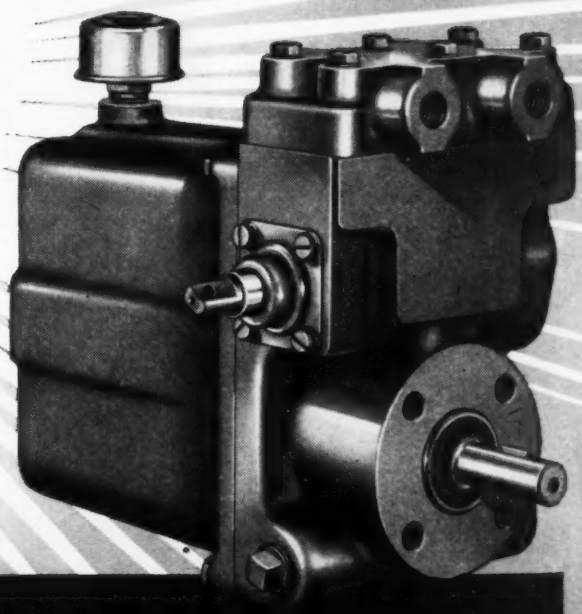
GULF

"PACKAGED HYDRAULICS"

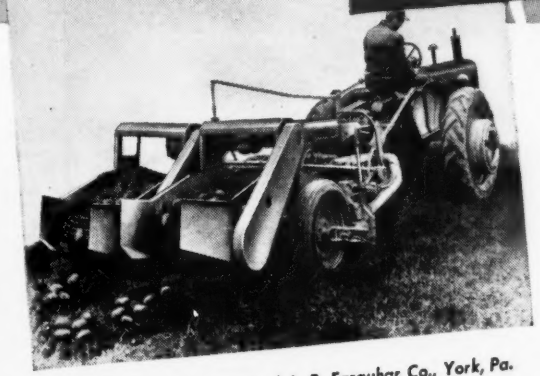
MANY ADVANTAGES

MANY USES



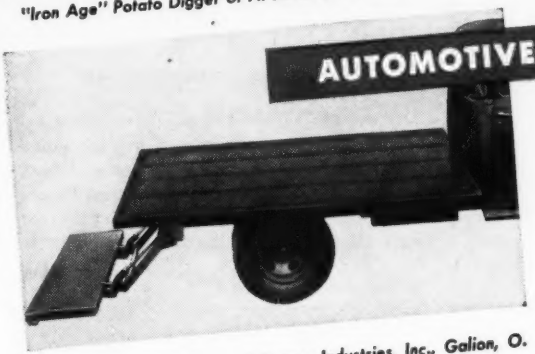
VICKERS POWER PACK

AGRICULTURE



"Iron Age" Potato Digger of A. B. Farquhar Co., York, Pa.

AUTOMOTIVE



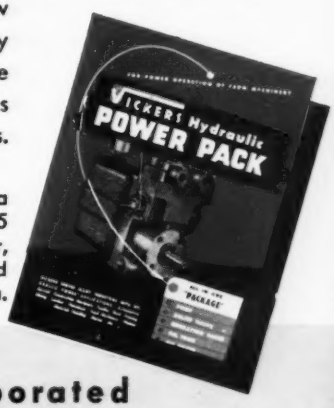
"Hydraul-Lift" Tail Gate of Cemco Industries, Inc., Galion, O.

CONSTRUCTION

"Profit Mover" of Construction Products Corp., Lynwood, Calif.

The Vickers Hydraulic Power Pack is a compact, self-contained hydraulic system which meets a wide variety of control needs in mobile equipment. It provides the machinery equipment manufacturer with a quick, easy, low cost installation which assures his customers of long trouble free service.

Tractors, planters, cultivators, plows, stackers, loaders, harvesters, rakes, mowers, etc., are among the many agricultural uses for the Vickers Hydraulic Power Pack. On commercial vehicles, it saves time and labor by actuating dump hoists, lifting tail gates and other miscellaneous operations. In the construction industry, light duty scrapers and bulldozers, fork lift trucks, loaders, scoops, snow plows, tractors, etc., are conveniently and economically controlled by the Vickers Hydraulic Power Pack. It saves labor, speeds operation, cuts costs.



The Vickers Hydraulic Power Pack is a compact package weighing only 55 pounds. It incorporates an oil tank, filter, vane pump, overload relief valve and operating valve. Write for Bulletin 46-48a.

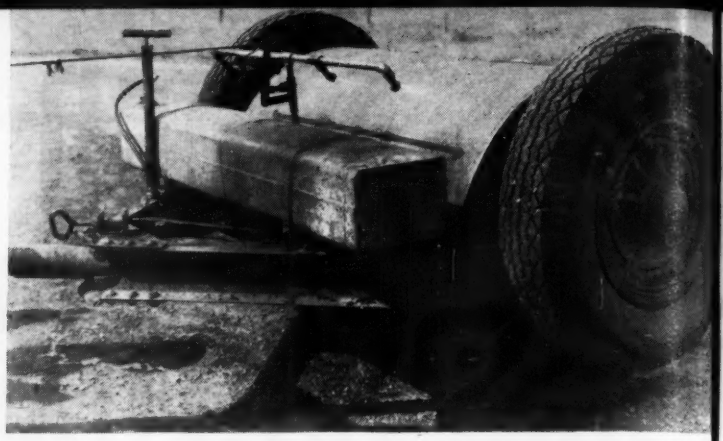
VICKERS Incorporated

DIVISION OF THE SPERRY CORPORATION

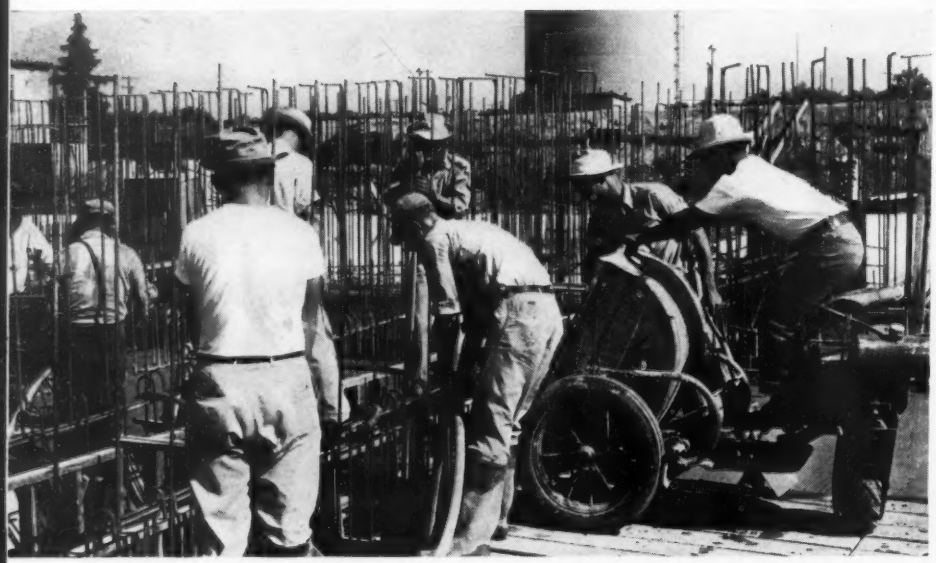
1494 OAKMAN BLVD. • DETROIT 32, MICHIGAN

Application Engineering Offices: **ATLANTA • CHICAGO • CINCINNATI • CLEVELAND DETROIT • LOS ANGELES • NEWARK • PHILADELPHIA • PITTSBURGH • ROCHESTER ROCKFORD • ST. LOUIS • SEATTLE • TULSA • WASHINGTON • WORCESTER**

HOW ...they did it



THE PRESSURE'S ON for this 60-in. pull-type road roller whose gravity sprinkling system has been changed to pressure type for more effective prevention of asphalt sticking. Garage and farm contributed to rig—with tire pump to build air pressure in 30-gal. water tank, and four orchard nozzles for spray. Valve in ½-in. feed pipe is cable controlled from pulling truck. Alterations were devised by T. L. Dilbeck, district foreman for Missouri Highway Department.



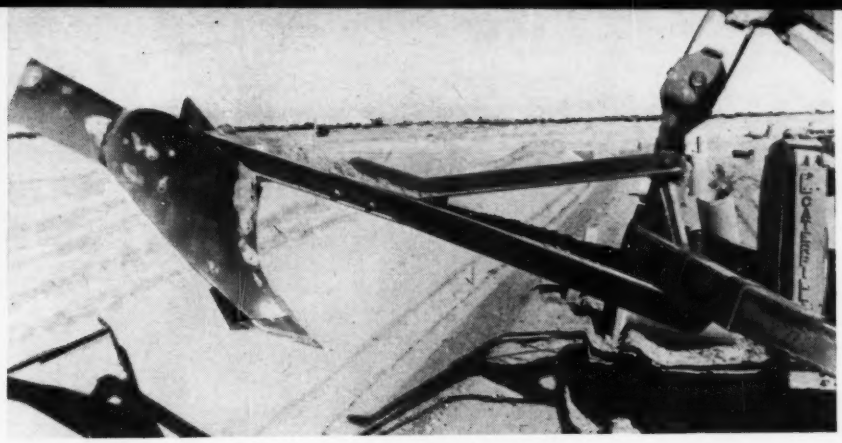
MOTORIZED CONCRETE BUGGIES speed placement of concrete in settling basins of new water softening and filtration plant of Metropolitan Water District of California at LaVerne, Calif. Carts powered by 4-hp. gasoline engine hold 9 cu.ft. of concrete and climb a 15-percent grade. Best progress made on maximum 500-ft. length of haul was 300 cu.yd. in 11 hr. for 4 buggies at speed of 3 mph. Developed for this job by Garlinghouse Bros. Co. of Los Angeles and used by L. E. Dixon Co., general contractor.

Metropolitan Water District Photo

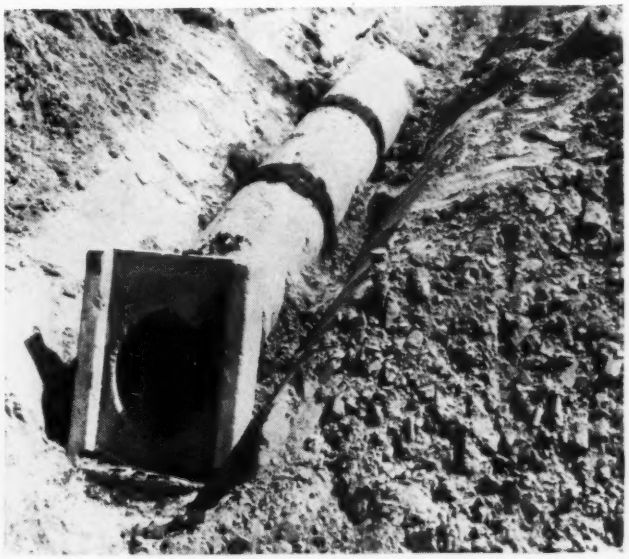
TO RESIST ABRASIVE ACTION of sand-bearing water at Ohio silica sand quarry valve is provided with Goodrich rubber lining.

HEAVY BASE FOR ANVIL (below) is made up by Tennessee Gas Transmission Co. of 30-in. pipe section covered with ½-in. circular plate to which anchor blocks and tierods are welded. If more weight in base is desired, another plate is welded to bottom and pipe is filled with sand.

PUSH BAR ON TRAILERS of construction department of Tennessee Gas Transmission Co. (below) enables bulldozers or trucks to give stalled truck-trailer units a helpful shove without damage to pusher or pushee. Bar unit consists of extra heavy 3-in. pipe members welded to rear end of trailer, as shown in accompanying illustration, with knee braces fastened to main frame just behind spring pads. Assembly allows free access to rear wheels, yet also acts as bumper preventing bed from over-riding platform when unit is backed against loading ramp.

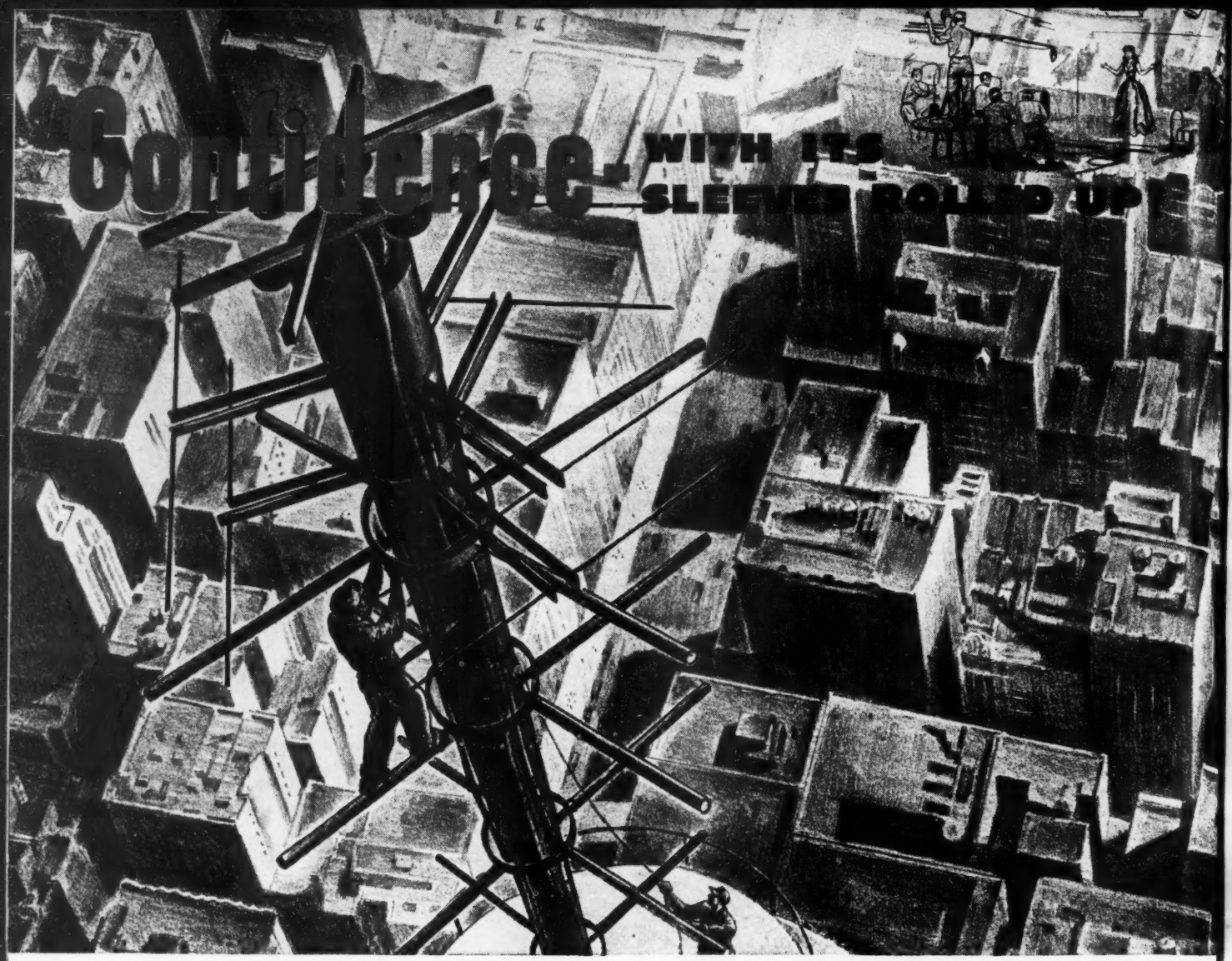


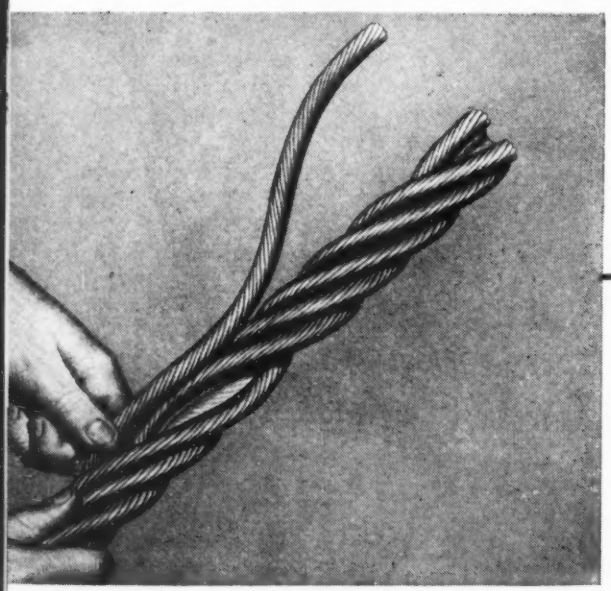
FOR EXCAVATING TURN-OUTS from irrigation ditches L. M. Armstrong, of U. S. Bureau of Reclamation's Gila project on lower Colorado River, devised equipment comprising ditcher plow on trunnion bar of Caterpillar D-7 tractor. At center, plow is shown ready to be lowered into earth and at right it is shown in action, pulled by tractor to form ditch. After turnout is excavated concrete pipe, at left, is placed in trench and later backfilled.



UNUSUAL CRANE LOAD (below) is 16-ton steeple of church in San Diego, Calif., which was dismantled, moved and reassembled at new site 8 mi. distant. Heavy steeple, disconnected from church, is here shown being lowered from supporting structure by two Lorain Moto-cranes with 90-ft. booms operated by R. E. Hazard Contracting Co., of San Diego.

METAL LATH STUDS (below) 5/8 in. in dia. and rectangular in shape, hold wire mesh reinforcing for eight cement-lined intake compartments in Nottingham crib fabricated by American Shipbuilding Co., of Lorain, Ohio. Four men, two with Nelson automatic stud welding guns and two installing mesh, completed 2,000 studs and 500 sq.ft. of mesh required for each compartment in 16 hr.





ATOP THE WORLD'S TALLEST BUILDING . . . yet not high enough! Television's need for unobstructed, long-range broadcasts may be met by planes in the stratosphere, relaying signals from the earth. Engineers working on this problem are confident of ultimate success.

With like confidence, Roebling blazes new trails in developing and making products vital to communication and all other industries. And the widespread confidence reposed in Roebling is our most guarded asset. Leadership is maintained only by constant progress . . . our ideal is to make Roebling products and engineering service the best obtainable anywhere, *any* time.

WHEN TO SPECIFY ROEBLING *Preformed* WIRE ROPE

WHEN IT WILL SAVE YOU MONEY is the time to specify Roebling Preformed Wire Rope. Wherever wire rope is subjected to severe bending, Roebling Preformed is an outstanding money-saver. On thousands of installations it lasts far longer than Non-Preformed ropes . . . pulls down performance costs to an all-time low.

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Get your Roebling Field Man's advice about Preformed and the possibility of its saving you money. You can act on his suggestions with full confidence for he *knows* wire rope, how to choose the *right* one, how to maintain it for top service. Write or call him at your nearest Roebling branch office.

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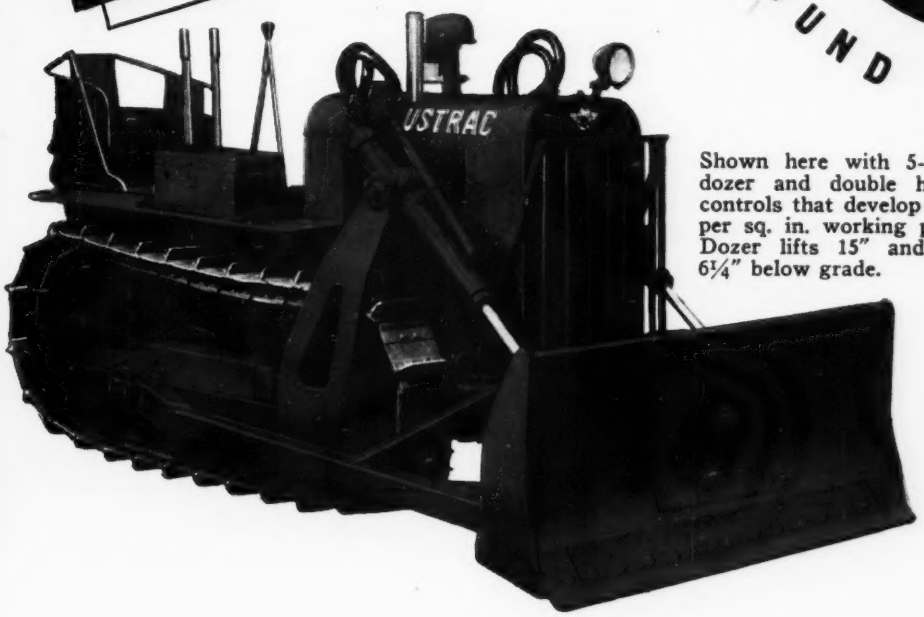
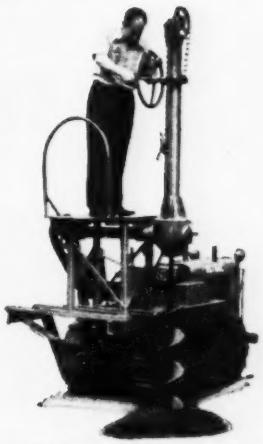
★ WIRE ROPE AND STRAND ★ FITTINGS ★ SLINGS ★ SUSPENSION BRIDGES AND CABLES ★ AIRCORD, AIRCORD TERMINALS AND AIR CONTROLS ★ AERIAL WIRE ROPE SYSTEMS ★ ELECTRICAL WIRE AND CABLE ★ SKI LIFTS ★ HARD, ANNEALED OR TEMPERED HIGH AND LOW CARBON FINE AND SPECIALTY WIRE, FLAT WIRE, COLD ROLLED STRIP AND COLD ROLLED SPRING STEEL ★ SCREEN, HARDWARE AND INDUSTRIAL WIRE CLOTH ★ LAWN MOWERS

The NEW Crawler with Postwar Features

USTRAC AROUND THE WORLD



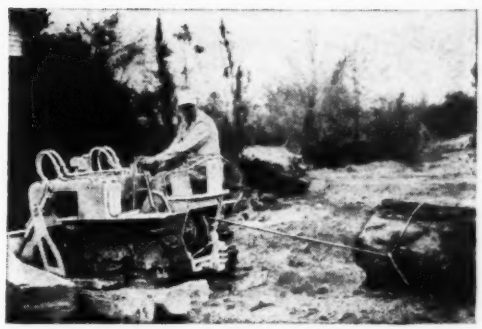
Shown here with 5-ft. bulldozer and double hydraulic controls that develop 800 lbs. per sq. in. working pressure. Dozer lifts 15" and lowers 6¼" below grade.



USTRAC "Speedigger" post hole digger. Easy to attach. Digs all size holes to desired depths. Thousands of "Speediggers" in use — fully proved.

Extra Power and Performance for Your Money

USTRAC is the direct descendant of the famous wartime Clark Airborne Tractor, designed and tested for heavy-duty peace-time work — small but atom-packed with power, 20 h.p. at the drawbar from the 4-cylinder Continental gas engine. Unmatched fast performance — 4 speeds forward, 4 reverse; speeds from .98 m.p.h. to 8.03, with instant reverse lever (no reverse gears to shift), a work-wonder on backfilling and dozing. Only 37" wide, 92" long, USTRAC turns on a dime, gets in and out of narrow places that block a big tractor, is moved swiftly from job to job on any truck. Besides, it cuts fuel costs as much as 50% on many jobs. You simply can't beat the USTRAC for getting a lot of work done fast, easily and at low costs. See your nearest dealer now — or write at once for full information.



Heavy-duty power winch — shown here winching a log 32 inches in diameter. 3-ton pulling capacity — cable-drum holds 325 ft. of ⅜" cable.

Handy Attachments for 100 Jobs

Hydraulic Power Control

Hydraulic Angle Dozer — 5-ft. Bulldozer

3-Ton Power Winch — Belt Pully Winch

Post Hole Digger

Pull Type Grader — 2-Wheel Terracer

Snow Plow

2-Wheel Wood Box "Low-Boy" Trailer

U. S. Tractor Corporation

WARREN, OHIO, U. S. A.

DESIGNED FOR REMOVING both trees and stumps, this Fleco Detachable Stumper, mounted on Cat D7, concentrates full power of tractor in 31-in. blade. Teeth of stumper will go 2 ft. below ground after stumps. It can be mounted or dismounted in few minutes.

FLECO STUMPER IN ACTION on land-clearing demonstration put on at Clemson (S.C.) Agricultural College by Florida Land Clearing Equipment Co. Stumper tackles both trees and stumps.

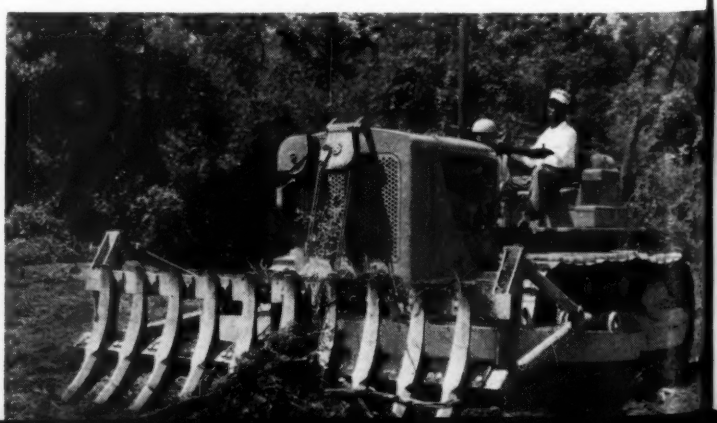
New Tools Simplify Land Clearing

ANOTHER TYPE OF STUMPER is Hercules model, also made by Fleco, welded to special frame. Here one of rigs owned by C. E. Allen of De Land, Fla., is rooting out old pine stumps near Altoona, Fla., for their chemical content. Allen averages more than 100 stumps per hr. with this outfit.

TRACTOR - MOUNTED STUMPERS, brush pilers and root rakers are speeding up and also are taking all the hard work out of land clearing and grubbing operations. Here is a roundup of several new such gadgets, submitted by Caterpillar Tractor Co., Peoria, Ill.

SPECIAL BRUSH STACKER (below) is mounted on front end of Cat D8 by N. H. Roane, Campbellton, Tex., for big clearing job near Karnes City, Tex. Stacker is 13 ft. wide.

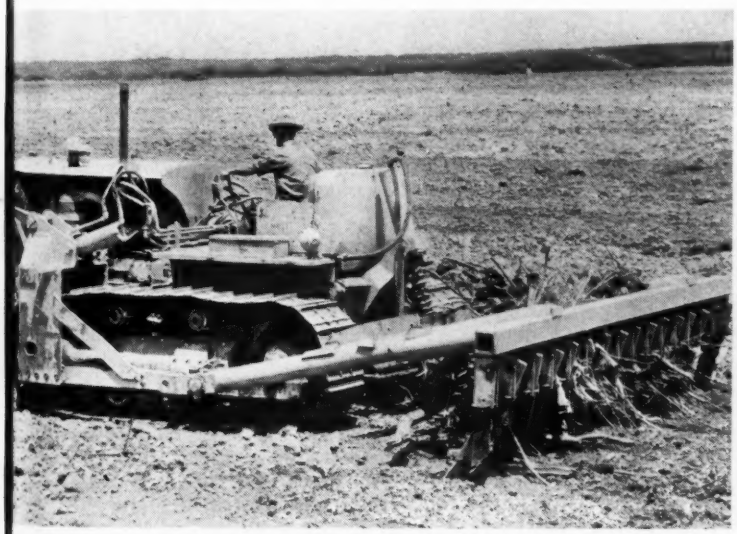
HUSKY TEETH on Fleco All-Purpose Root Rake (below), hanging on Cat D7, get way down deep to comb roots and stump fragments out of ground without removing topsoil.



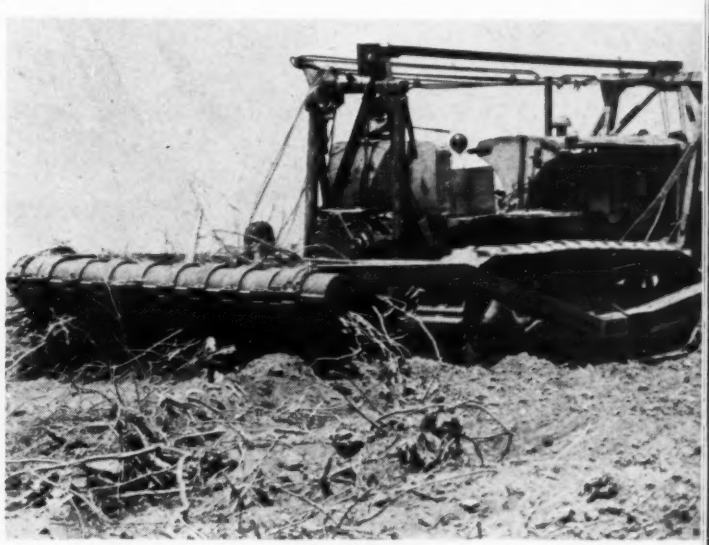
DEMONSTRATION at Clemson Agricultural College by Florida Land Clearing Equipment Co. shows how Fleco Root Rake can also be used as brush stacker.

HEAVY-DUTY TWO-PRONG ROOT RAKE trailed behind Cat D8 is used by Holt-Murphy Farm in Nueces River Bottom, Texas, to break up ground and cut deep-seated roots.

HYDRAULIC-OPERATED TRAILING ROOT RAKE (below), with removable teeth fastened to box frame, clears ground at M. L. and H. M. Copenhaver ranch near La Pryor, Tex. This rig is mounted on Cat D8.



TRAILING ROOT RAKE (below), with teeth strapped to welded pipe frame, brings roots to surface after previous plowing on Bill Morrow's land clearing operations near San Antonio, Tex. Rake is cable-operated.



SPREADING ROCK with an Adnun black top paver is a recent innovation devised by Porter W. Yett, Portland, Ore., contractor. To provide traction on the 2- to 4-in. rock, four chain-driven, rubber-tired wheels were mounted behind the paver. This base course is being placed on the Sunset Highway, an Oregon Highway Department project connecting Portland with the Pacific Ocean shore.

LIFTING CAPACITY UP 50%

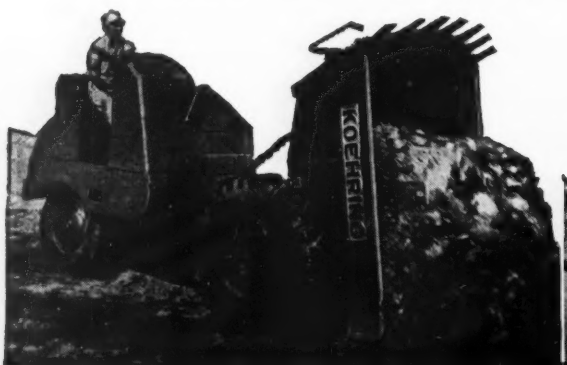
When You Mount KOEHRING ON RUBBER

High lifting capacity of the Koehring 304 goes up to 40,000 lbs., is increased by 8½ tons over crawler mounted capacity, when the 304 is mounted on the Koehring Truck Crane Chassis. Lifting Capacity of the Koehring 205 Truck Crane is up proportionately, to 20,000 lbs. Koehring 304 Cruiser Crane (one-man operated, rubber mounted) lifts 29,000 honest pounds. Koehring 205 Cruiser lifts 14,500 lbs.

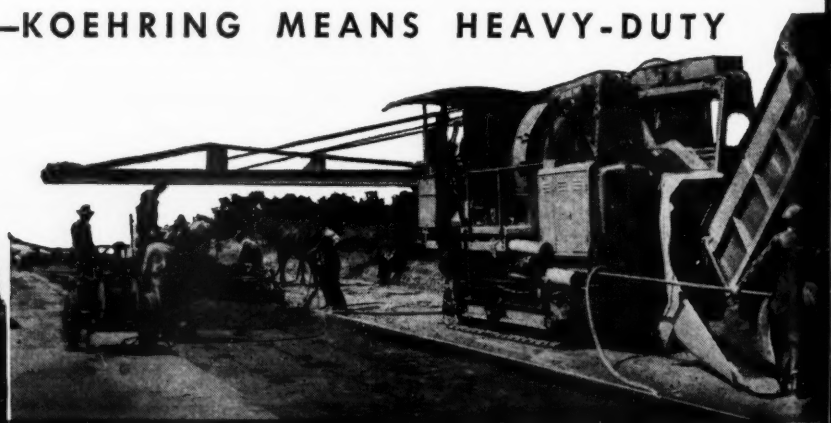
Safely stepping up lifting capacities as much as 50% over crawler capacities is possible only because every Koehring base machine is designed with more than ample reserve strength. Big safety factors enable you to turn every bit of extra stability gained in rubber mounting into extra profit-making lifting capacity.

One-man operation saves labor cost as this Koehring 304 Cruiser Crane handles demolition to make room for new construction.

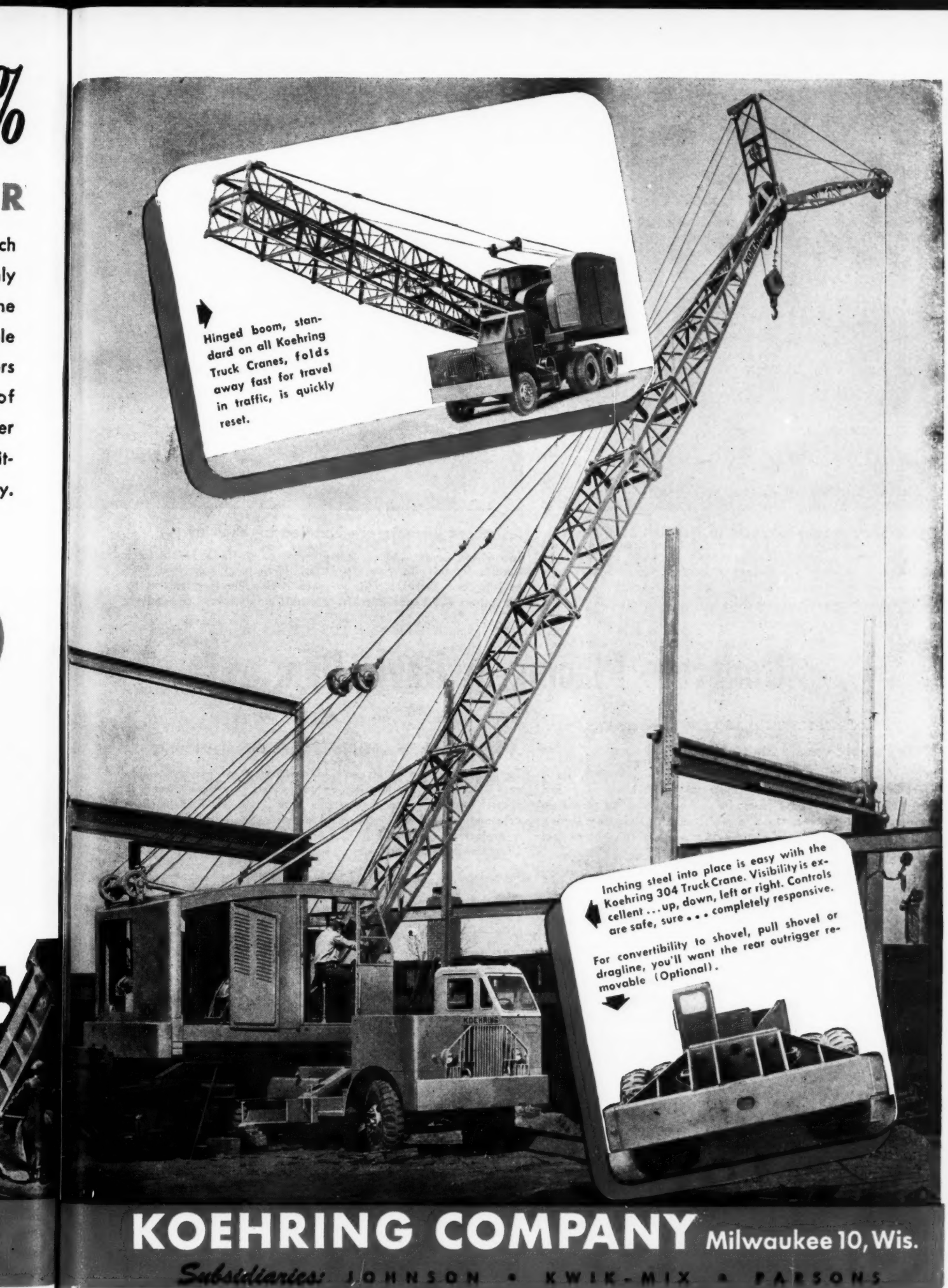
HAULING OR PAVING—KOEHRING MEANS HEAVY-DUTY

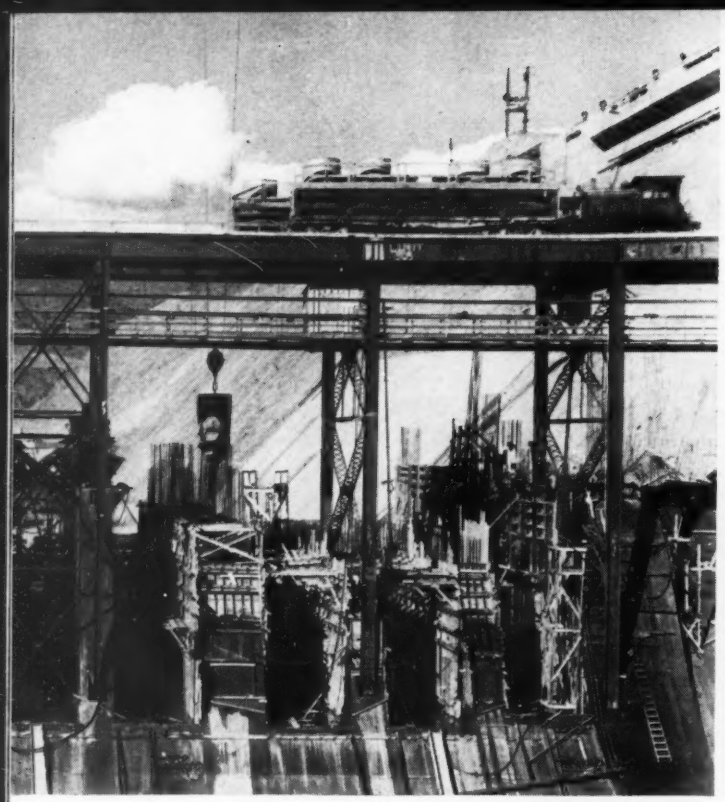


Koehring Dumptor, built by a shovel manufacturer for work with shovels, dumps in 1 second, never turns on shuttle hauls.



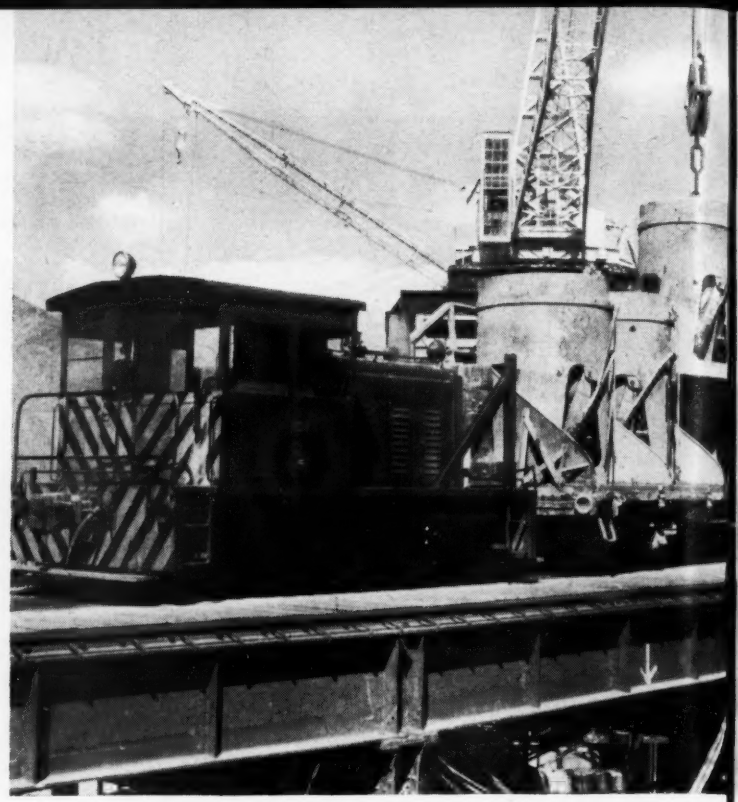
Koehring 34-E Twinbatch Paver, long the reliable Heavy-Duty leader in its field, gets highway jobs through on schedule, in the money.


Hinged boom, standard on all Koehring Truck Cranes, folds away fast for travel in traffic, is quickly reset.
Inching steel into place is easy with the Koehring 304 Truck Crane. Visibility is excellent ... up, down, left or right. Controls are safe, sure ... completely responsive.
For convertibility to shovel, pull shovel or dragline, you'll want the rear outrigger removable (Optional).
KOEHRING
KOEHRING COMPANY Milwaukee 10, Wis.
Subsidiaries: JOHNSON • KWIK-MIX • PARSONS



Gas dinkey shoves loads on to trestle . . .

Standard railroad flatcars haul concrete in 4-yd. buckets from mixing plant to point of placement over high trestle (see also front cover) spanning intake and spillway sections of Davis Dam. Complicated forms require careful placing.



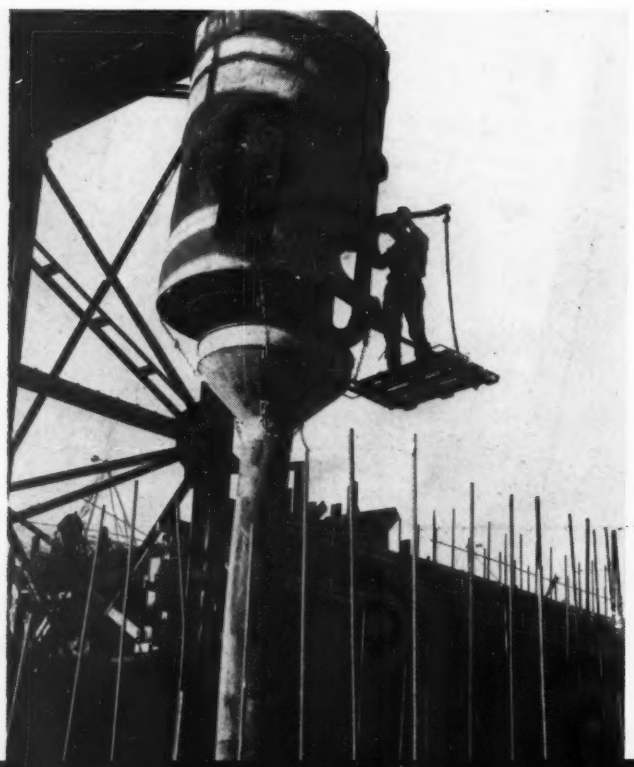
. . . where buckets are handled by Whirley . . .

Two 40-ton Clyde Whirley gantry cranes on 43-ft.-ga. trestle track transfer buckets from car to forms. Five-pocket cars haul four buckets; one bucket is left on crane hook while train returns to mixer, then is dropped into empty pocket before loads are handled.

Concrete Placing at Davis Dam

. . . to flexible spouts for tight-spot placing . . .

Rubber-fabric elephant trunk, capped with metal hopper, leads concrete from 4-yd. Blaw-Knox roller-gate bucket to small and deep form sections. Spout hangs from bucket, must be picked up for every load. Quick-detachable platform, also riding on bucket, is safe platform for dump man. This procedure requires perfect signaling system to crane.



. . . . which are parked in towers between loads.

To protect rubber spouts and to make elephant trunk assembly easily accessible for hitching on to buckets, they are placed in special wooden tower when not in actual use. H. F. Bahmeir is construction engineer for Bureau of Reclamation; H. E. Williams is project manager and T. L. Terry is general superintendent for Utah Construction Co.

Everything You Need in Tractor Equipment..

. . . for lowest cost dirt moving with International Crawler Tractors

FROM big 22-yard scrapers on down to tamping rollers . . . Bucyrus-Erie offers you a complete line of equipment for use with International Crawler Tractors. Here is everything you need to cut down on dirt moving costs — all engineered and built by the manufacturer with more than 68 years of experience in the dirt moving game. When you buy Bucyrus-Erie tractor equipment, you get the toughest, most productive units on the market!

BUCYRUS-ERIE CO., SOUTH MILWAUKEE, WIS.

For BUCYRUS ERIE TRACTOR EQUIPMENT See Your

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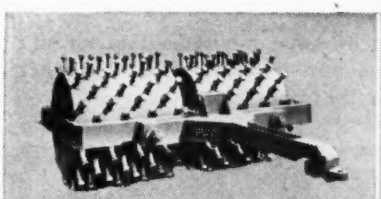
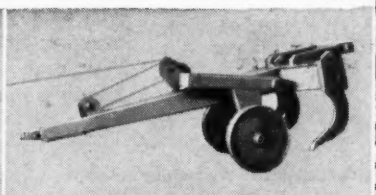
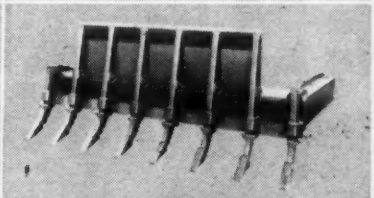


TAMPING ROLLERS

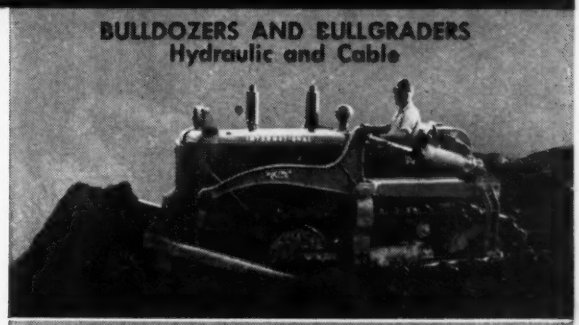


CABLE RIPPERS

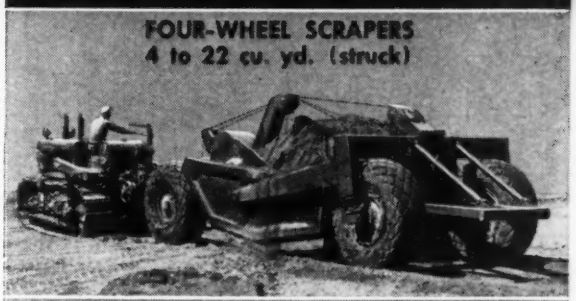
TRACTOR CABS



GRUBBERS



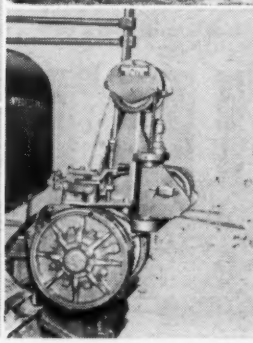
BULLDOZERS AND BULLGRADERS
Hydraulic and Cable



FOUR-WHEEL SCRAPERS
4 to 22 cu. yd. (struck)

TWO-WHEEL SCRAPERS
3½ to 5 cu. yd. (struck)

DOZER-SHOVELS
½ and ¾ cu. yd.



Single and Double Drum
POWER CONTROL WINCHES
Front or rear mounted

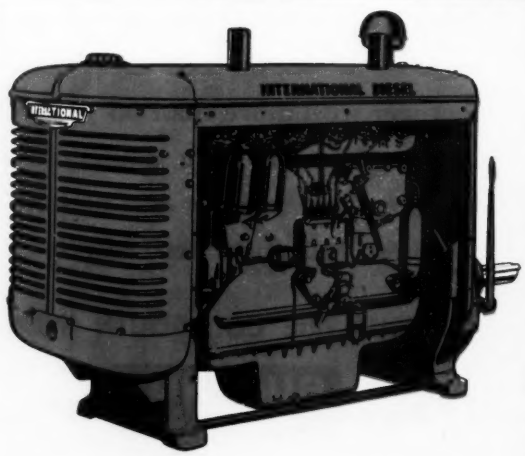
PRODUCTIVE INTERNATIONAL POWER *Pays Profits*

Grading 11.8 miles of farm-to-market roads required moving 205,000 yards of earth. Here's a job that demanded dependable, productive earthmoving power. Chosen for the task—six International TD-18 Diesel Crawlers, one International ID-9 Diesel wheel tractor, two International-powered graders and an International-powered self-propelled scraper.

Here's another example of what contractors are discovering every day—it's wise to standardize on International Power. It pays off in lower operating and maintenance costs and in *more work done in a shorter time.*

Discuss your earthmoving problems with your International Industrial Power Distributor. He'll show you how International tractors and International-powered earthmoving equipment will put more profits in your pocket on any earthmoving job.

Industrial Power Division
INTERNATIONAL HARVESTER COMPANY
Chicago 1, Illinois

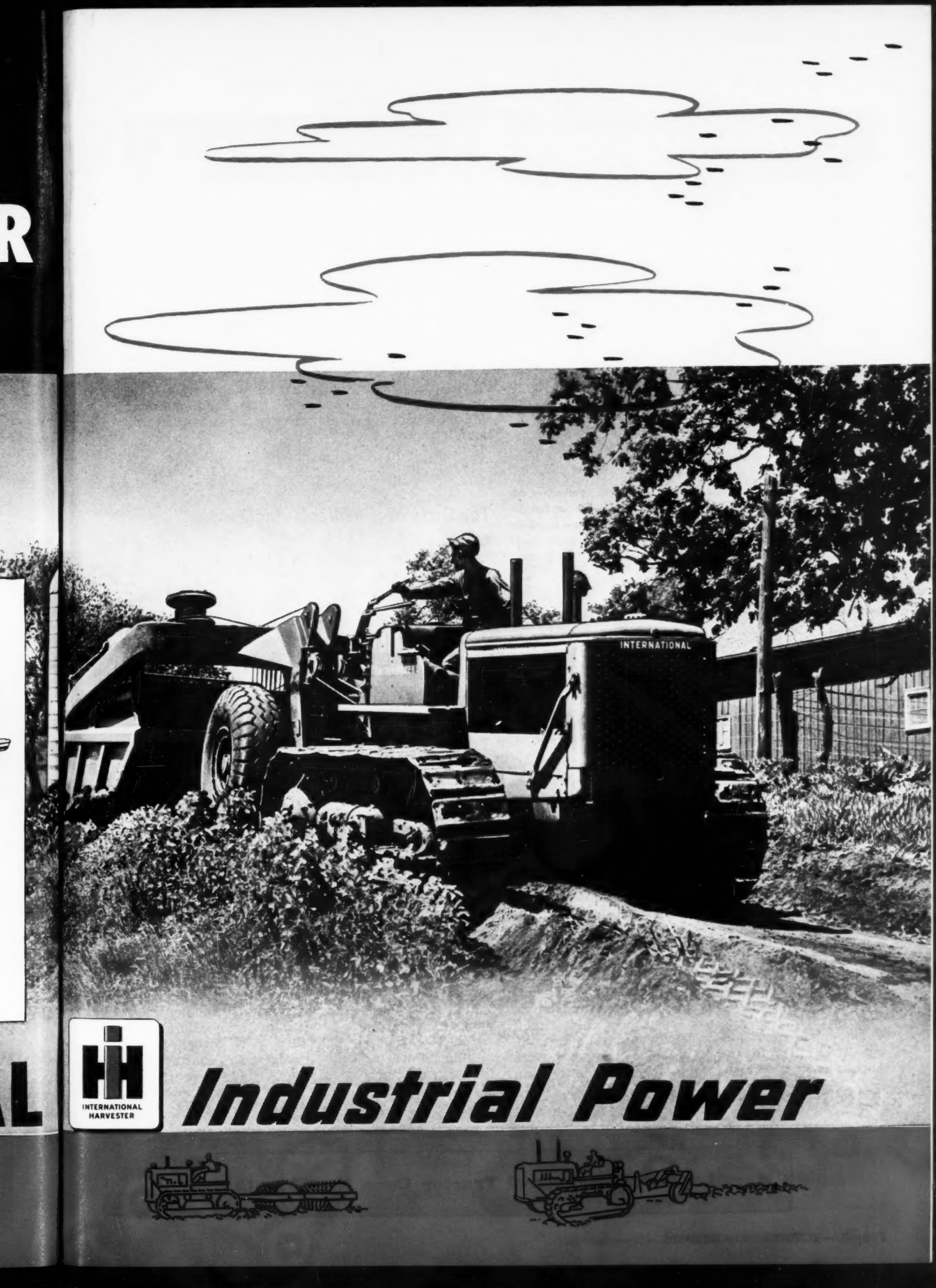


The International UD-18A engine is the power plant in the TD-18 Crawler. This dependable Diesel is one of a line of six Diesel and four carburetor-type International Power Units. Whatever your power and equipment needs may be, specify International engines for all your requirements. Productive International Power is the key to greater profits.

Tune in James Melton on "Harvest of Stars" CBS Wednesday evenings

CRAWLER TRACTORS
POWER UNITS
DIESEL ENGINES
WHEEL TRACTORS

INTERNATIONAL

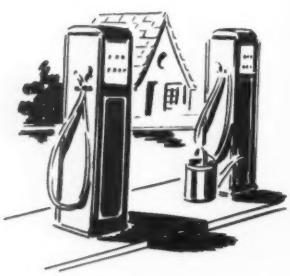

INTERNATIONAL
INTERNATIONAL HARVESTER
Industrial Power

LEGAL ADVENTURES OF TRACTOR CONN

By LESLIE JOBB

By recounting the experiences of Tractor Conn, who symbolizes the average contractor, this series of articles, each based on the decision of an American court and presented in plain, non-legalistic terms, is designed to help construction men avoid costly legal pitfalls.—Editor

The Case of the Minnesota "Materials"



"Your tender has been accepted," the highway board announced.

"Glad to hear it," Tractor Conn agreed. "I'll be ready to sign the contract whenever you've had it prepared and my own lawyer has looked it over."

"Of course, you'll have to furnish the required surety bond to secure payment of your wages and materials furnished," the highway board pointed out.

"I counted on that," Conn agreed, and furnished the usual bond to secure the payment of all "materials" furnished.

The contract was duly signed, Tractor Conn began work, installed a power shovel in a gravel pit, transported the gravel by motor trucks, and began the construction of the road specified in the contract.

The power shovel and trucks would not run without lubricating oil and gasoline, oil and gas were bought from a garage in the locality, Tractor Conn failed to pay, and the garage people went after the surety company which had furnished the bond.

"Oil and gas supplied to the machinery under these circumstances are not 'materials' within the meaning of the bond," the surety company contended, and the Minnesota Supreme Court settled the point in a case reported in 200 Northwestern Reporter, 937.

"It is too clear for argument that lubricating oils and gasoline used for the engines of excavation and transportation in constructing a highway are so clearly " 'materials' under and for the purpose of the contract" as to negative the necessity for discussion," said the Court in ruling that the surety company was bound to pay.

The Case of the Illinois Accident

"All scaffolds, ladders, supports or appliances, used in erecting, constructing, painting, altering or repairing any building or other structure shall be so constructed as to be adequate protection to the workmen and laborers employed thereon," a state statute provided. John Doe contracted with Tractor Conn to erect a building and Conn sublet part of the work to Roe. Roe failed to observe the state law quoted above. Poe was injured in consequence thereof, and claimed damages from Doe and Tractor Conn.

"You broke the law and are bound to pay the resulting damages," Poe contended.

"You are working for Roe, not for us, and you'll have to look to him for damages." Doe and Conn told him.

This point came before the Illinois Supreme Court in a case reported in 141 Northeastern Reporter, 739, where the Court ruled in Poe's favor.

"The owner of the property and every contractor and subcontractor are equally bound by the law to comply with its provisions, and in case of wilful failure are liable to the party injured for any direct damages sustained by reason of such failure. This liability to the person injured, the owner or the original contractor cannot evade by any contract with the contractor or subcontractor," said the court.

More Legal Adventures of Tractor Conn Next Month

the Sky's the limit

That's why Heil's Open-top scraper design increases heaped-load capacity... reduces your earthmoving costs

Heil twin-cable scrapers have nothing over the bowl — no overhead structures, no cables — just sky. So, it's no wonder that this open-top design gives you greater heaped-load capacity—lets you move more dirt in less time.

Other advantages are: Fast loading. Quick dumping. Low center of gravity. Better operator vision. High ground clearance. Longer cable life. Short turning radius.

Moreover, its open-top design lets you easily shovel-load a Heil twin-cable scraper and use it as a bottom-dump wagon whenever you need it.

Ask your International Industrial Power Distributor to show you why Heil twin-cable scrapers reduce earthmoving costs. Capacities range from 6 to 25 cubic yards. Write us for our new bulletin.

R-101

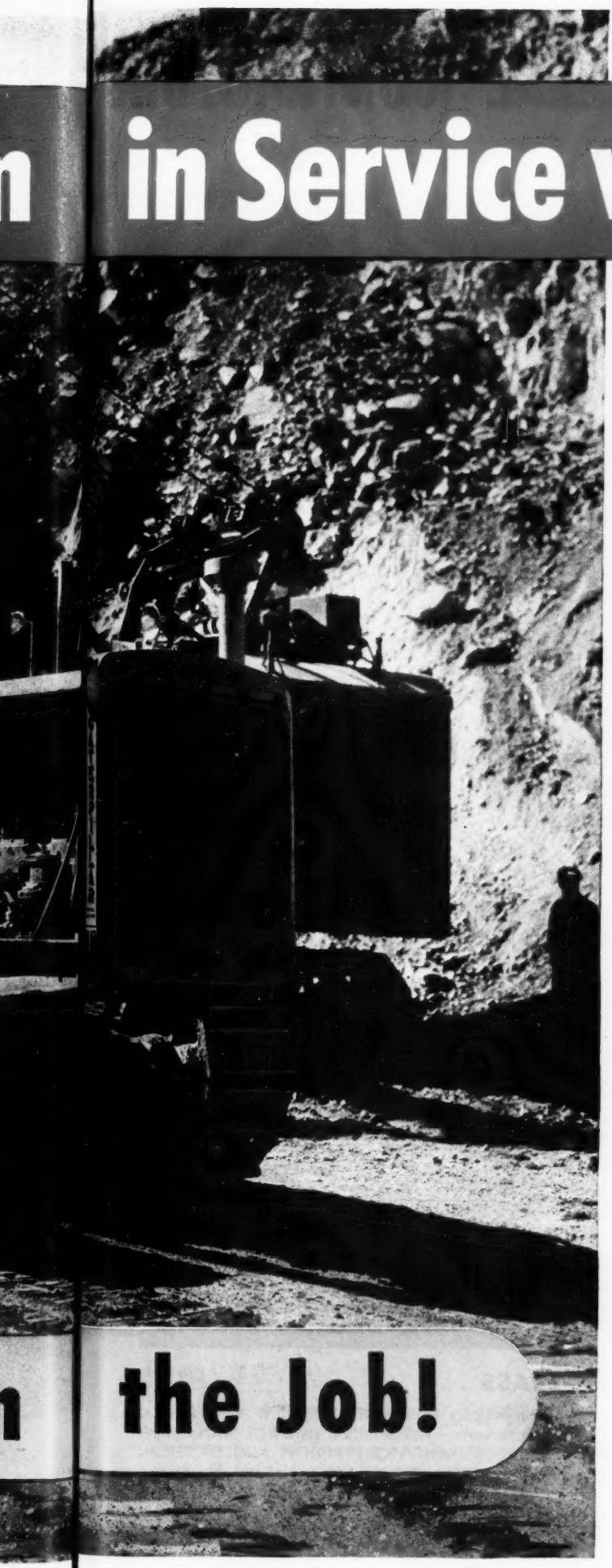
HEILINER SCRAPER | HYDRAULIC TRAILBUILDER | CABLEDOZER

THE HEIL CO.

GENERAL OFFICES • MILWAUKEE 1, WISCONSIN

Keep 'em
Caterpillar
Diesel
TENOL keeps Diesels on

in Service with TENOL



..the Heavy Duty Oil for Heavy Duty Engines

Sinclair TENOL is a heavy duty oil made specially for diesel engine service. It has high oxidation stability—the formation of acidic compounds and resultant gum and varnish is largely eliminated.

Furthermore, TENOL'S detergent and dispersion properties hold possible contamination by carbon and sludge in suspension until drained off in the oil. Selected additive agents protect sensitive alloy bearings against corrosion, and restrict foaming.

Because a clean engine means free rings and pistons and no excessive sludge accumulation, the time between tear-downs is increased—cost per operating hour decreased.

To keep your diesels in steady service, use TENOL for sure, safe engine lubrication.

the Job!

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HEAVY DUTY LUBRICANTS

YOUR NEAREST SINCLAIR AGENT WILL GLADLY ARRANGE FOR LUBRICATION COUNSEL, OR YOU MAY WRITE TO SINCLAIR REFINING COMPANY, 630 FIFTH AVENUE, NEW YORK 20, N. Y.

ASSOCIATED GENERAL CONTRACTORS IN

EXECUTIVE COMMITTEE AT WORK . . .

Many a problem harassed the Mid-Year meeting of the Associated General Contractors of America at Chicago in September, but this group of stalwart leaders making up the Executive Committee always came up with the right answer. They are: GEORGE KOSS, Des Moines, Ia.; BILL MUIRHEAD, Durham, N. C.; GLEN MAXON, Dayton, Ohio; FORREST PARROTT, Sioux City, Ia.; C. P. STREET, Charlotte, N. C.; SAM FULLER, Pittsburgh; HARRY DICK, Portland, Ore.; ART ATHERTON, Seattle; GAYLE ARMSTRONG, Roswell, N. M.; H. E. FOREMAN, A.G.C. Managing Director; and WALTER COUSE, Detroit. President DWIGHT W. WINKELMAN, Syracuse, and Vice-President ADOLPH TEICHERT, JR., Sacramento, remain seated.

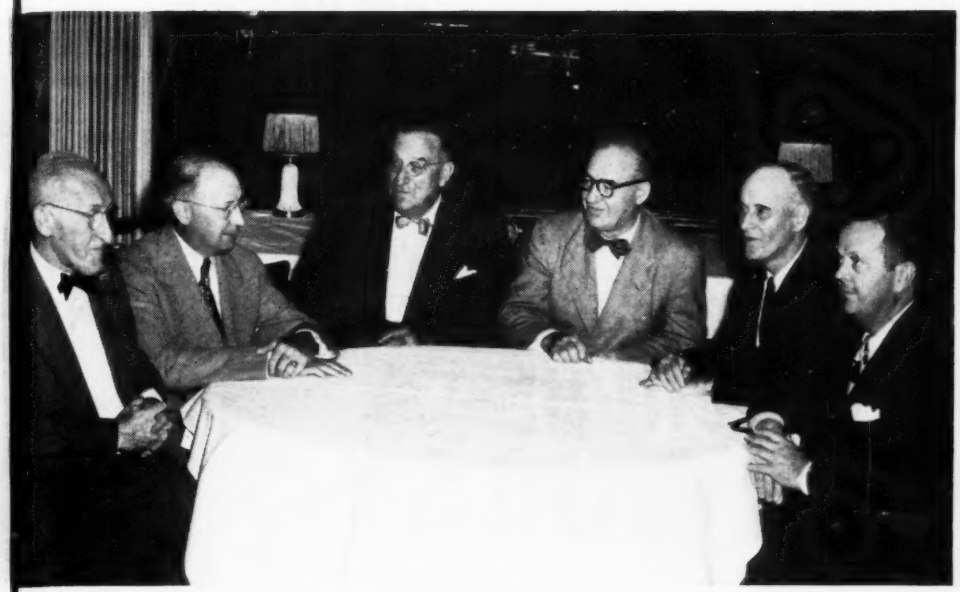
FIREWORKS . . .

WILLIAM SIMON, special counsel for the Congressional Capehart Committee making a study of the effect of elimination of the basing point pricing system, answers some tough questions from the floor as WALTER COUSE looks on. Couse, selected as the A.G.C. nominee for vice-president next year, represents contracting on the Capehart Committee advisory board. Simon did a grand job in explaining the Supreme Court's decision and the studies being made to determine its effect on all concerned.

HIGH BRASS . . .

Now what do you suppose PRESIDENT DWIGHT W. WINKELMAN (right) has done to warrant such a critical stare from MANAGING DIRECTOR DOC FOREMAN? VICE-PRESIDENT ADOLPH TEICHERT, JR., on the left, takes a disinterested view of the proceedings, for he has just been notified of his selection as president for next year.

ORS IN ACTION AT CHICAGO MEETING



LABOR . . .

Such troublesome topics as overtime on overtime and jurisdictional dispute settlements are discussed by this A.G.C. top labor group. Around table from left are: EDWARD P. PALMER, New York; ARTHUR H. WELLS, Chicago; FRANK W. BARNES, New York; JIM MARSHALL, A.G.C. assistant managing director and labor expert; ROY PICKETT, Detroit, chairman A.G.C. Labor Committee; and E. W. (BABE) MENEFEE, Sedalia, Mo. Palmer and Marshall are contractor trustees on National Joint Board for Settlement of Jurisdictional Disputes; Wells, Barnes and Menefee are pool members of Board. Babe seems rather skeptical about discussion.

HIGHWAYMEN . . .

The Highway Division meeting was concerned mostly with means of stimulating roadbuilding program and keeping down highway costs. Here, ARCHIE CARTER (right), Division Manager, talks it over with chairman GEORGE KOSS.

HEAVIES . . .

The Heavy and Railroad Contractors Division got the special treatment at their divisional meeting when COL. P. A. FERINGA (right), Assistant Chief of Engineers for Civil Works told them about Corps of Engineers plans for river and flood control. The group included: SAM FULLER, chairman; ARTHUR S. HORNER, vice-chairman; DOC FOREMAN; and ADOLPH TEICHERT, JR.

BUILDERS . . .

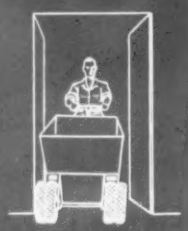
Moguls of A.G.C. Building Division talk it over at special division session. C. P. (GABBY) STREET (left), and ART ATHERTON (right), vice-chairman and chairman, respectively, of Division, listen to some words of wisdom from WELTON SNOW, Division Manager.

Hustle 5 wheelbarrowsful per load... at 10 m.p.h.

FROM THE MIXER CHUTE WITH THE

Whiteman POWER BUGGY

CLIMBS 20% INCLINE ...WITH FULL LOAD



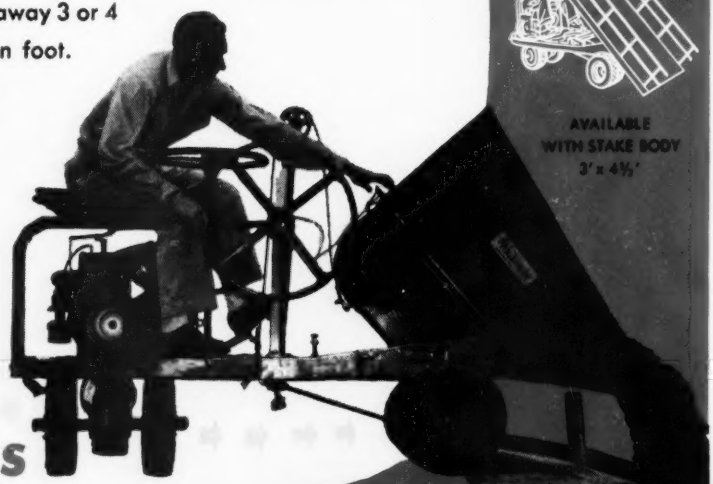
GOES THROUGH DOORWAYS

Built like a truck . . . hauls like a truck

With a 7½ H.P., standard 4-cycle gas engine built to take heavy hauling. 34 inches high . . . fits under most mixer chutes without blocks . . . takes a full load of concrete (4 to 5 wheelbarrow loads) and speeds away 3 or 4 times faster than a man on foot. Quickly pays for itself in man-hours saved.

AVAILABLE WITH STAKE BODY 3' x 4½'

- **Capacity, 2000 lbs. or 12 cu. ft.**
- **Simple design . . . for easy maintenance.**
- **Forward or reverse, at 2 to 12 mph.**
- **Wheelbarrow tires . . . interchangeable wheels.**



TURNS ON A DIME . . . REVERSES

TO THE FORMS

Manufacturers of the well-known

Whiteman FLOATING-FINISHING MACHINES

and other concrete equipment

MODEL J . . . the amazing mechanical trowel. For small or large contractors.

WHITEMAN MFG. CO., 3249 Casitas Avenue, Los Angeles 26, California

Please send me literature and prices on the Whiteman Power Buggy and other Whiteman Concrete Equipment.

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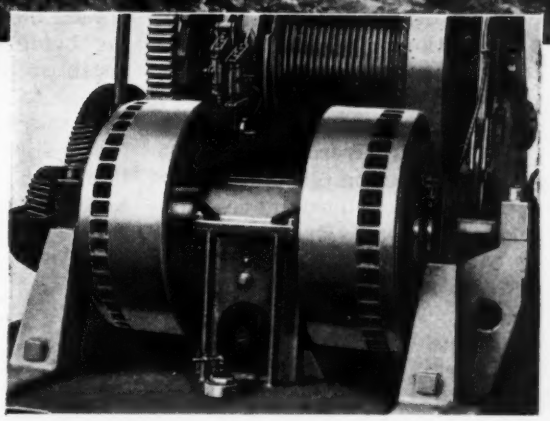
SWING FRICTIONS ARE *OUT*

THE MAGNETORQUE'S *IN*

P&H 1055 owned by Lytle-Amis-Green at Potholes Dam, Columbia River Irrigation Project. Nine million yards of rock and dirt will make this the 4th longest dam in the U. S.



THE P&H MAGNETORQUE UNIT transmits power for swing electromagnetically without mechanical contact between driving and driven members—without friction, without wear. It lasts the life of the machine.

It's the downright simplicity of the P&H Magnetorque that makes such a big difference in overall operation. It makes swing frictions obsolete — puts an end to high maintenance costs — eliminates routine adjustments that normally rob machines of productive time.

The Magnetorque handles all swing motions electro-magnetically — yet without big motors or tricky, complex electrical equipment. It's simple, dependable, trouble free. And it's smooth — with fast, velvety starts and stops. No jolting and jarring to strain the swing assembly or other parts of the machine. Ask us to tell you where you can see one at work.

P&H

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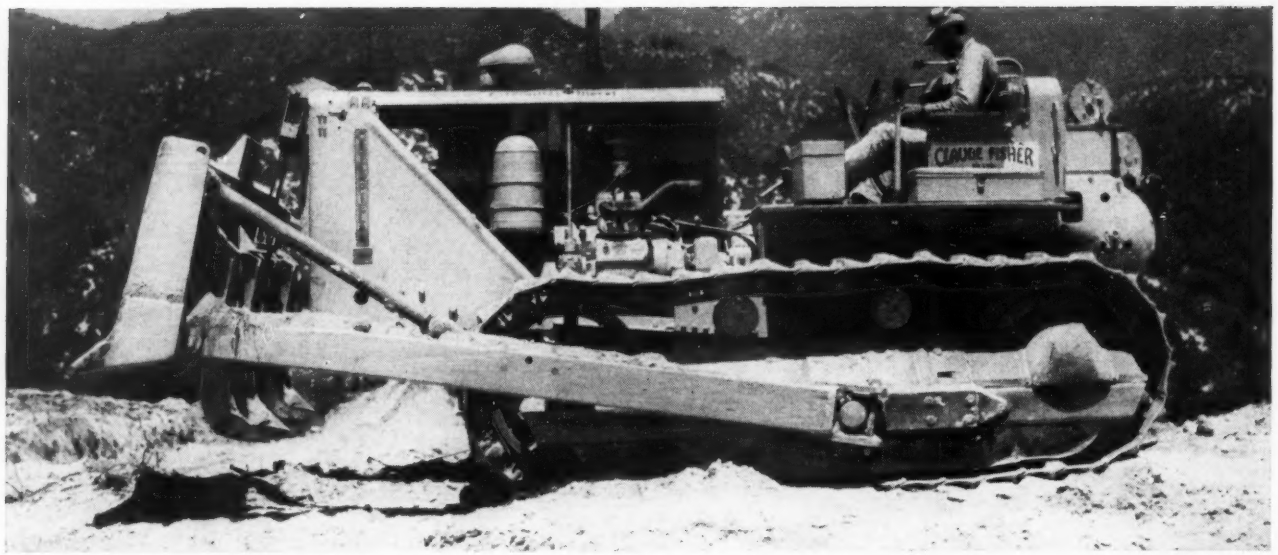
HARNISCHFEGER CORPORATION
EXCAVATORS · ELECTRIC CRANES · ARC WELDERS · P&H · HOISTS · WELDING ELECTRODES · MOTORS



SCARIFIER TEETH, fastened to back of Caterpillar bulldozer blade, drop down into ripping position when blade is raised. Scarifier acts only when tractor is backing up.

Back-Up Rippers on Bulldozer Blade

SCARIFIER TEETH on a bulldozer blade, cleverly designed to rip up hard material on the back travel of the tractor, and then automatically kick up in the clear on the forward travel while the bulldozer is pushing, appeared on a pioneer mountain road job in southern California. Contractors L. A. & R. S. Rowe and Claude Fisher Co., Ltd., are using the new gadget to good advantage on a joint venture contract for San Bernardino county.

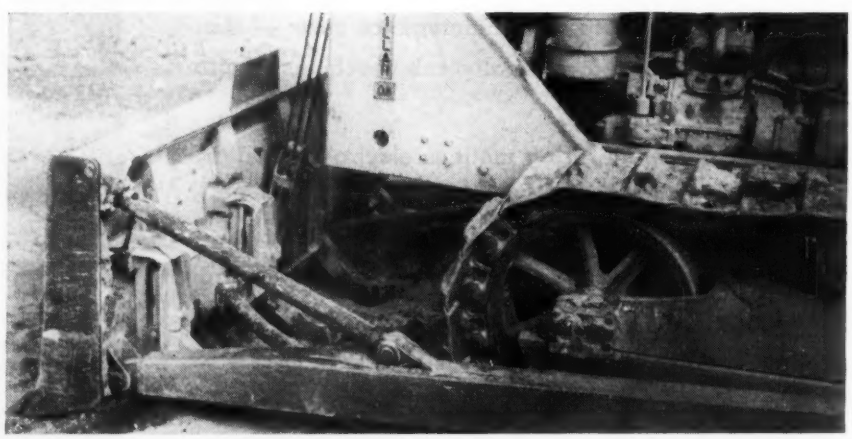
As the teeth are mounted to ride free on the forward stroke, all scarifying is accomplished during the normal dead-head move back for the next load. Hard spots are thus broken up, and the bulldozer is able to move a full load every trip.

The mechanism consists of four, patented hinged-tooth assemblies welded to the backside of the bulldozer moldboard. The teeth are heat-treated alloy steel, equipped with removable points, operating independently of each other. They can be locked in carrying position.

Stub-axle connection parts come with the larger models to take the back pull of the tractor. Heavy flat bars are welded to the top and bottom of a dozer push beam at the axle ends. Large size heat-treated pins drop in behind the axle bearing caps, holding the caps firmly in position.

When blading forward, the teeth supported on the hinge pins drag freely over the ground. At the end of the blading trip the operator merely raises the blade about one foot, allowing the teeth to swing down, then starts backing and lowers the blade as he does. The floating blade serves as an automatic depth control, limiting tooth penetration to some 8 in. Less penetration may be had by raising the blade slightly. The troweling action of the blade, passing over the ripped sections, leaves a smooth surface over the loose material. This is well suited for hauling scraper operations.

Adequate strength is designed into the pieces as on this particular installation in which the teeth are 3x4 in .in cross-section. For other sizes of tractors, other sizes of teeth are available. They also can be had for almost all makes or models of tractor and bulldozer. The teeth are manufactured by the Small Equipment Co., 405 So. Orange Grove Ave., Los Angeles, Calif.



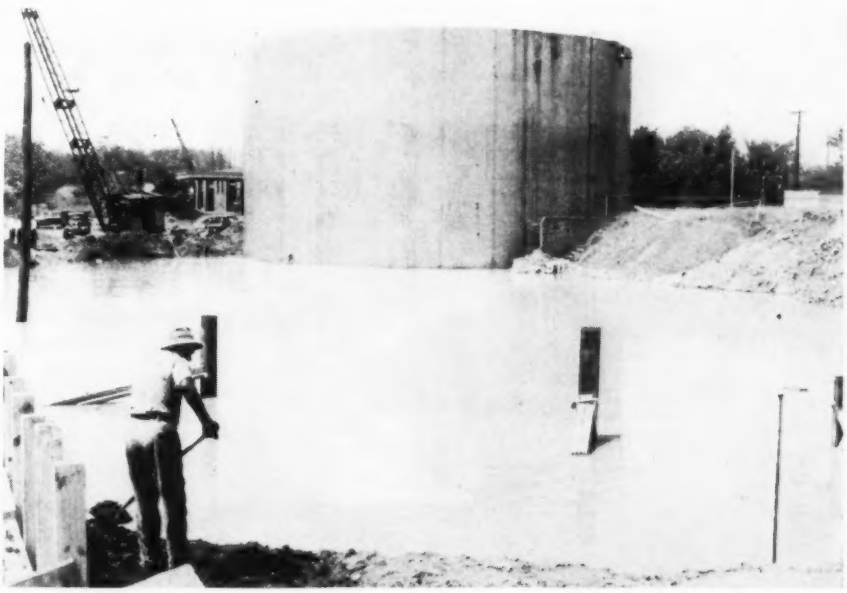
WHEN TRACTOR is pushing bulldozer blade ahead, scarifier teeth automatically ride free in clear position. Contractors on San Bernardino county road job find scarifier increases bulldozer yardage in hard material.

Floating Power Moves Big Tank

START OF A SWIM for a big oil tank at Washington, D. C. 1,300,000-gal. container is lifted off old base by flooding inclosure within dike, ready for 400-ft. move.

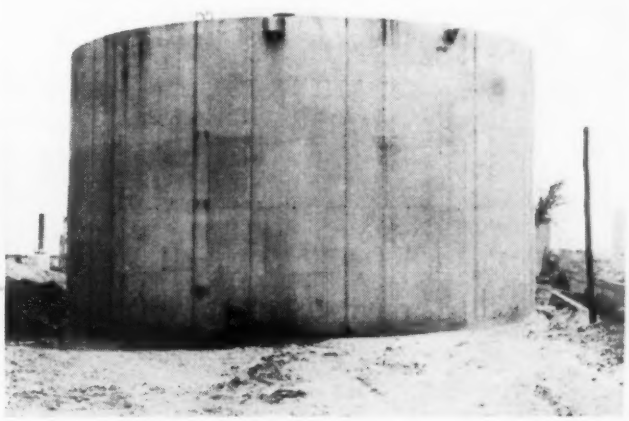
BIG EMPTY OIL TANKS are almost as buoyant as balloons, so Esso Standard Oil Co. and its contractor took advantage of this physical phenomenon to float a 1,300,000-gal. cylindrical structure over the waves of a man-made pond on a 400-ft. move in Washington, D. C. 'Twas a simple job to build a dike around the tank and its travel course, flood the inclosure, and keel-haul the just-buoyant cylinder with shore-anchored block-and-falls tackle from one location to another.

The move was made to make way for Esso Standard Oil Co., Baltimore, new loading facilities by W. M. Hillson Co., Alexandria, Va., contractor, under the watchful eye of J. S. Dempster, division engineer, and Dan Shawhan, inspector for the oil company's construction and maintenance department.



TANK COMES TO TEMPORARY REST after first 100 ft. of travel while workmen extend dike and pond on dogleg course to left for remainder of move.

CATCHER'S MITT for big toss is five-finger semicircular backstop into which tank will be eased at final resting place.



HIGH AND DRY after water is drained from pool, 215-ton tank rests on rolled-fill base none the worse for its 400-ft. trip.

Cat Skinners Replace Mule Skinners, but . . .

Railroad Building Is Still Hard Work

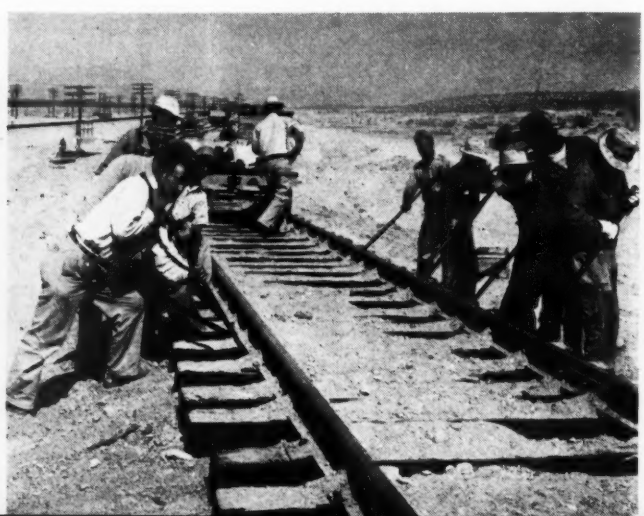
IT HAS BEEN a long time since the building of the transcontinental railroads that so many old time engineers and contractors remember vividly. Yet, except for adoption of some improved mechanical equipment, many of the construction techniques are similar. This is illustrated on a new 52-mi. railroad built at a cost of $3,800,000 by the Kaiser Co. in California's Salton Sea basin to haul iron ore.

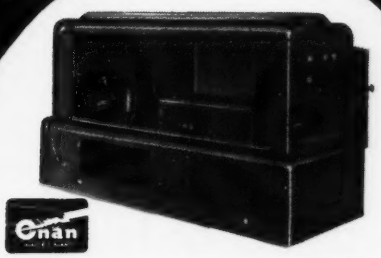
Equipment such as Caterpillar tractors and LeTourneau carryalls processed the 600,000 cu.yd. of cut and 2,000,000 cu.yd. of fill. This represents a considerable improvement over the old mule-drawn slip and Fresno scrapers. Trucks spread the ties along the right-of-way in advance of the construction train. Other than that, construction was standard.

Track was placed by a work train hauling a flatcar load of rail. Ballast was placed and alignment straightened by the age-old back-breaking methods.

Contractors on this new railroad were the J. F. Shea Co., Los Angeles; General Construction Co., Seattle; and Pacific Bridge Corp., San Francisco. The line was designed by Kaiser Engineers, Inc., George Havas, chief engineer.

TRUCKS DISTRIBUTE TIES in advance of track laying, but they are spotted by hand (above left) by lonely crew on California desert railroad while another lonely crew (below left) mans work train. Sweat and brawn still seem to be best power for final track alignment (below right).





Onan standby electric plants, made by D. W. Onan & Sons, Inc., of Minneapolis, are widely used to protect business, hospitals, theaters, public buildings, farms and homes against costly powerline failures. With reliability of top importance on such jobs, Ford Industrial Engines are standard on many Onan models. Pictured is a 10,000 watt model powered by the Ford 120 Four Cylinder Industrial Engine.

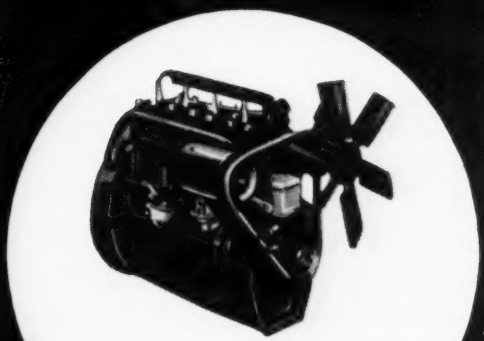
Use FORD *Industrial Power...*

Be Right 3 Ways!

1 **RIGHT POWER**—your choice of five rugged new models in the Ford Industrial Engine line. There's one *just right* for your power problem.

2 **RIGHT FEATURES**—you're always right up to date when you specify Ford Power. Every model has all the latest benefits of Ford's famed progressive engineering.

3 **RIGHT SERVICE**—as near to you as your Ford Dealer, with complete facilities and "know-how" to keep Ford Industrial Engines on the job for maximum use, lower costs.



Ford 120 Four Cylinder Industrial Engine (120 cu. in. displacement)

Ford Get acquainted with the new Ford "Power-Family" . . . five great industrial engines—a "four" of 120 cu. in. displacement . . . two "sixes"—226 cu. in. and 254 cu. in. displacement . . . two "eights"—239 cu. in. and 337 cu. in. The *right* power for you, and every one completely new! Send post card today for full specifications and—for power, pick Ford!

FORD MOTOR COMPANY

INDUSTRIAL AND MARINE ENGINE SALES DEPARTMENT

Dearborn, Michigan

YOUR JOB IS WELL-POWERED WHEN IT'S FORD-POWERED

"Give us the tools..."

TO SURVIVE

America Must Have Better Tools

IN THE past twenty years the United States has failed to provide its workers with enough new tools and equipment.

To most Americans this statement will come as a shock—or will be doubted. We are quite complacent about our industrial equipment, for easily understood reasons.

Throughout the '30s we heard continuously the propaganda line that the United States had become a "mature economy." The job of equipping America with industrial plants and tools was said to be largely done.

Now, knowing that industry is spending billions to expand and rebuild its plants, many people assume that the result must be a first-class industrial system.

A further powerful inducement to complacency is the vastly *worse* industrial condition of most of the rest of the world. When Americans look abroad in almost any direction they see shattered plants and equipment. A natural reaction is that we are sitting pretty.

That is a dangerous reaction. Between depression and war, we have failed to build the tools and equipment we need. This condition is dangerous for three reasons:

1. *From bitter experience we know that national security depends first and foremost on the capacity and readiness of our industrial equipment.*

All of our plans for stabilizing prosperity assume a world at peace. The greatest menace to peace would be an unarmed America, unable or unwilling to keep herself strong and ready for defense—strong in spirit, in resources and in the all-important industrial plant and equipment.

2. *Whether Americans live well—or badly—depends directly on the kind and quality of tools used by American workmen.*

This is true for all workers, and for every worker—from a garage mechanic and his wrenches to a steel mill gang and its rolling equipment. In a monumental study of "America's Needs and Resources" the Twentieth Century Fund found this fact: The improvement in the real income of the American people has more consistently followed the amount of power used in industry than anything else. What the workman worked *with* determined, more than any other factor, the size of his pay envelope, and what it would buy.

3. *Our success in stabilizing prosperity will depend largely on what we do about building new tools and equipment.*

About 30% of our industrial workers are employed in producing tools and equipment. Steady employment for them is essential to our over-all prosperity.

How far have we fallen behind in providing new plants and equipment?

Estimates vary. Here is one rough estimate: If we had built new industrial facilities during 1930-48 at the rate we did in the prosperous '20s, we would have spent at least $100 billion more than actually we did.

To get a better and more complete measure of this deficit, McGraw-Hill is undertaking a survey of American Business' Needs for New Plant and Equipment.

Businessmen all over the nation are being asked to answer questions like this: How much

money would you need to put your plant in first class condition? How much are you planning to spend for new plant and equipment? Where do you expect to raise the money? The results will be reported later in this editorial series. Already the survey shows we have fallen many billions of dollars behind.

Some shortcomings are apparent to everyone. They are revealed in a lot of rickety transportation facilities and in rundown buildings.

Many other deficiencies do not come into general view. They are, for example, the antiquated machines in our plants. Of the privately-owned machine tools in use in 1945—when the last census of metalworking equipment was made by AMERICAN MACHINIST—54% were more than 10 years old. Their average age is higher today.

It is true that in recent years we have hit new highs in total national production. But we have done so by putting far more people to work than ever worked before . . . and by driving equipment to the limit of its waning endurance, sometimes beyond. It has not been done *primarily* in what is by all odds the best way to increase production—to use more and better and more modern tools and equipment.

Haven't we overcome much of this twenty-year deficit by rushing to build new plants since the end of the war?

No. For two clear-cut reasons:

1. The accumulated shortage is tremendous. The total of about $40 billion, which has been spent for industrial plant and equipment since VJ-Day, has not wiped it out.

2. Some key industries have had difficulty in getting the facilities they need. Take steel, for example—the industry that turns out our most basic industrial material. Its needs for new equipment are measured in billions of dollars. To pay for that equipment, it should have *risk capital*—money which people are willing to invest with a risk of losing for the sake of gain. For steel is an up-and-down industry. Earnings on its common stocks inevitably share both ways in those ups-and-downs.

Since the war, steel, in common with most of industry, has been unable to market new common stock successfully. Its outstanding stock is now selling for only about one-half the current net worth of the industry's present assets. With investors willing to pay only 50 cents on the dollar for its facilities, the industry can not readily sell stock to pay for *new* plant and equipment—at higher prices even than the old.

Why can't steel—and other industries—attract people who are willing to risk their money retooling America?

The full answer to that serious question must be left to future editorials in this series, for it involves many things . . . tax reform . . . mobilization of small savings . . . a new respect for corporate profits.

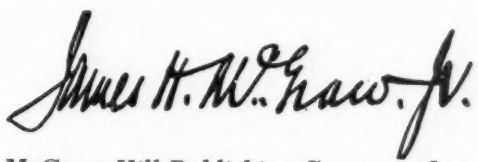
This first editorial seeks simply to emphasize two fundamentals:

First, our standard of living improves with the *quality* of our industrial equipment.

Second, American industry and American workmen badly need billions of dollars worth of better equipment *now.*

The American people must understand that *not only our continued prosperity but also our security as a nation depends upon giving American industry more and better equipment.*

"Give us the tools." This was Winston Churchill's cry for help to win the war. Only if we give American industry new and better tools will we have a chance to win abiding prosperity at home and good order abroad.

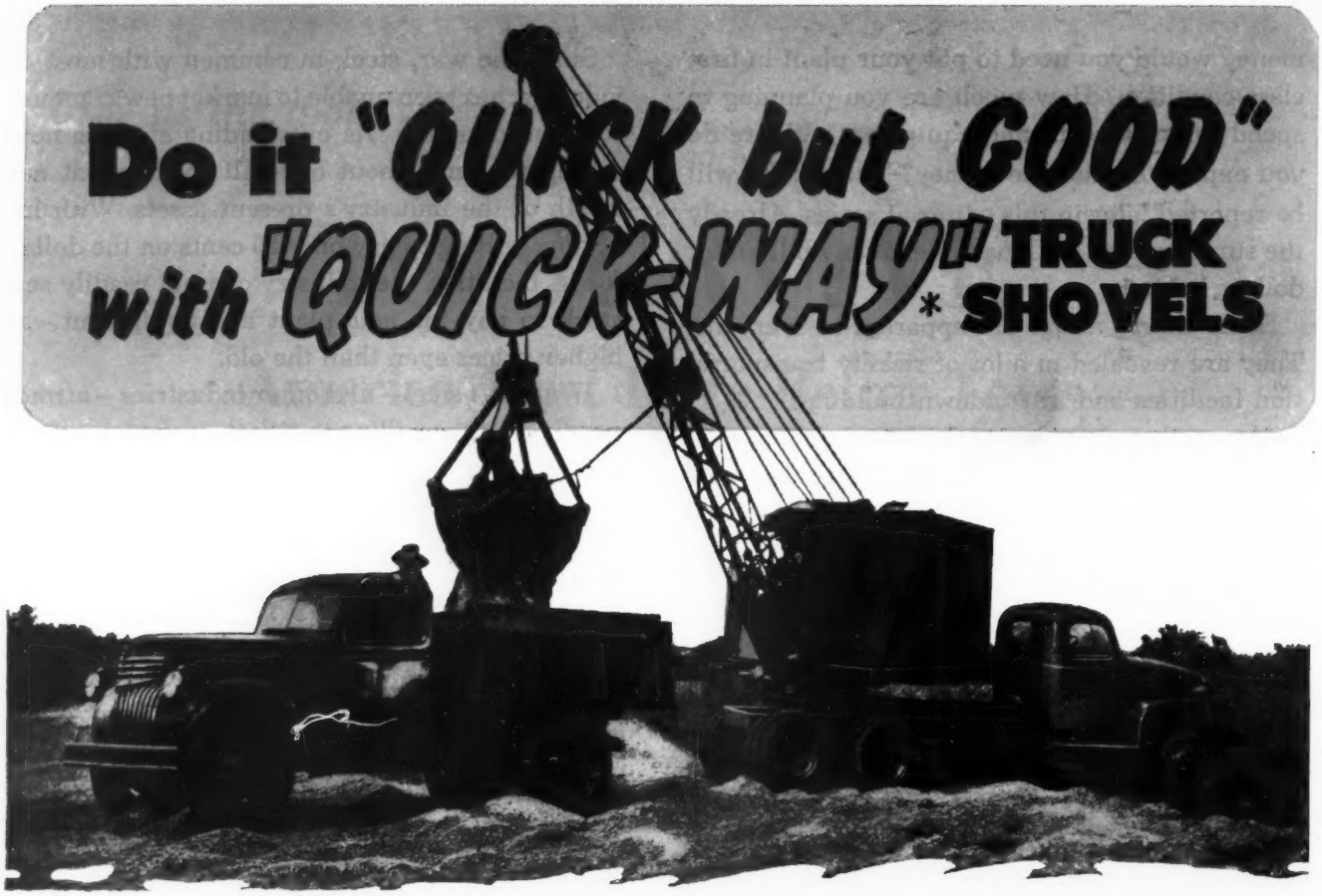


President, McGraw-Hill Publishing Company, Inc.

★ THIS EDITORIAL, and a series to follow, will be devoted to a single problem—how to provide American industry with the equipment needed to improve that envy of the world, the American standard of living. No more important problem confronts us today. Upon our wisdom in handling it depends not only the degree of our prosperity, but also our security as a nation.

THIS IS THE 69TH OF A SERIES

Do it "QUICK but GOOD" with "QUICK-WAY"* TRUCK SHOVELS



Whatever the job, a *"QUICK-WAY"* will do it both QUICK and GOOD. What's more, a *"QUICK-WAY"* will move to the next job and be hard at work in record time.

"QUICK-WAY" Truck Shovels are built to travel with any of your other mobile equipment — anywhere a truck can go, at truck speed. Quality steel is used throughout to cut dead weight and improve strength and durability.

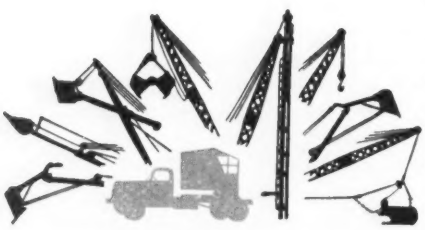
"QUICK-WAYS" are built low for stability on the job and on the road, clear low underpasses.

All parts are simple and easy to get at; this holds servicing time and expense at the minimum. Many working parts are interchangeable for easier, cheaper maintenance.

Best of all, a *"QUICK-WAY"* is many machines in one. Attachments are removed and replaced IN MINUTES to convert your *"QUICK-WAY"* from SHOVEL to CRANE, DRAGLINE, CLAMSHELL, PILE DRIVER, TRENCH-HOE, BACKFILLER or SCOOP. For speed, portability, economy of operation, and adaptability to a wider range of jobs, nothing of comparable size equals a *"QUICK-WAY"* Truck Shovel. There's a *"QUICK-WAY"* owner near you; ask HIM.

* Reg. U. S. Pat. Off.

"QUICK-WAY"



Model E: 4/10 cu. yd. cap., mounts on standard. 5-ton truck.

Model J: 1/4 cu. yd cap., mounts on standard 1½-ton truck.

"QUICK-WAY" TRUCK SHOVEL CO.

DENVER, COLORADO

WHY DO THIS

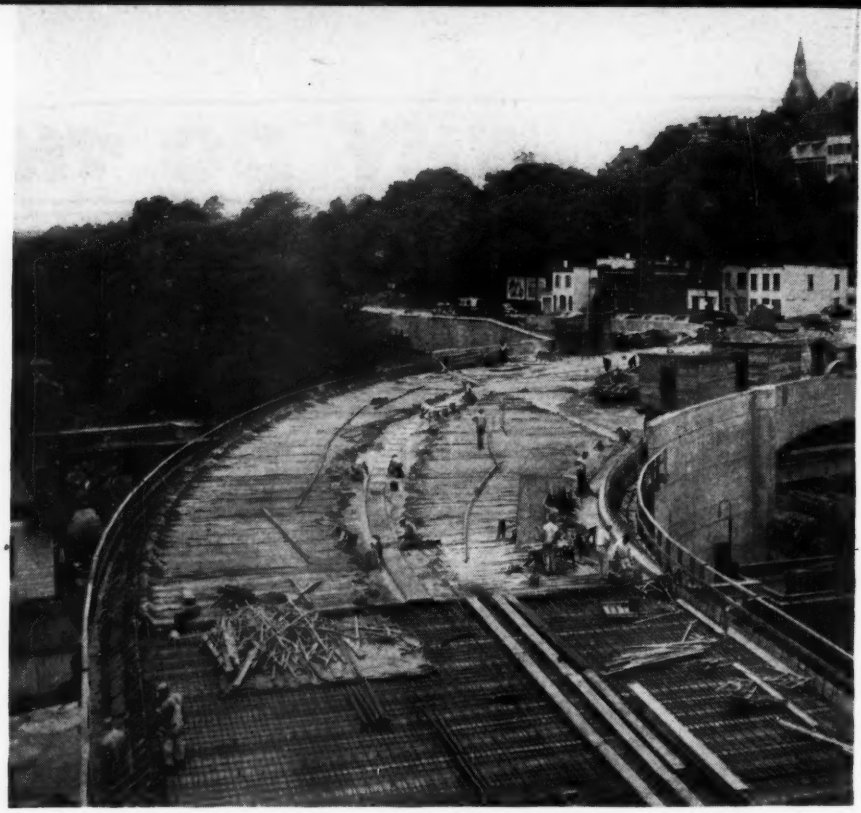
When

You Save Manpower and Money with BLACKHAWK Hydraulic Jacks

Dangerous, backbreaker jacking methods gobble up costs. With low efficiency jacks, muscle power is used fighting friction instead of doing the job. High efficiency Blackhawk Hydraulic Jacks put the power where it pays off. As a result, even on jobs requiring as high as 100 tons of power — one man with a Blackhawk does the job. It will pay you to investigate the many exclusive Service-Proved advantages of Blackhawk Hydraulic Jacks. When you need jacks — Buy the best—Buy Blackhawks from your Blackhawk Industrial Supply Distributor.

A Product of BLACKHAWK MFG. CO.
Dept. J-23118 Milwaukee 1, Wisconsin

BLACKHAWK

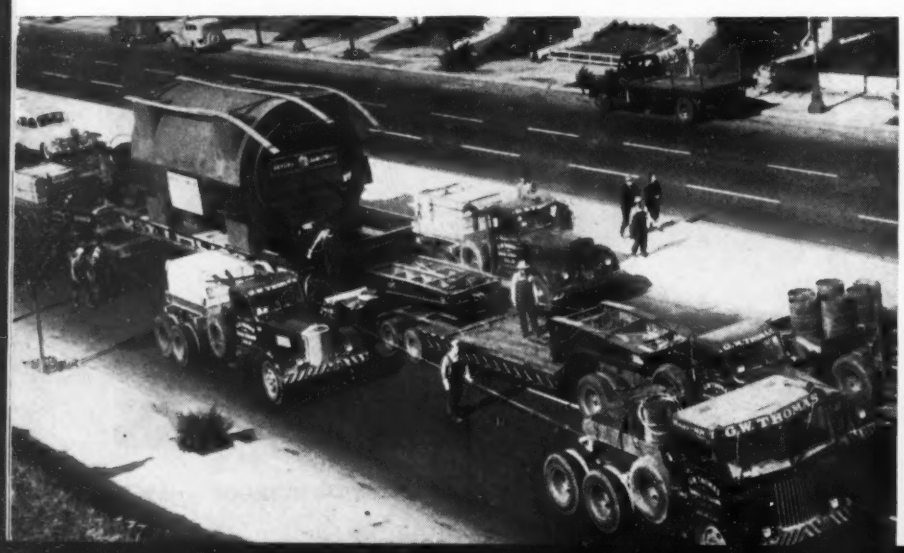


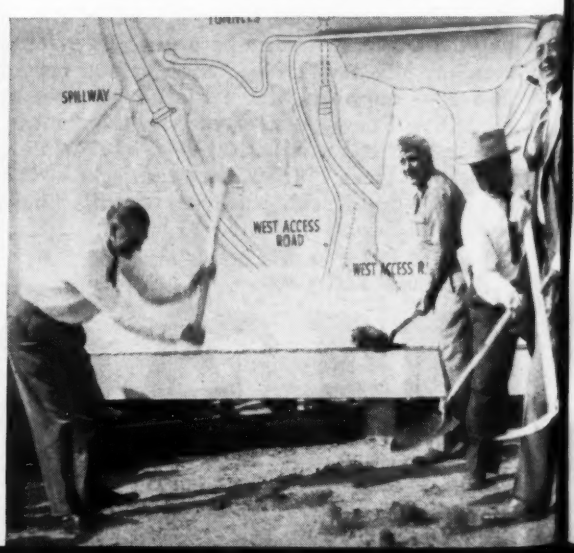
FINAL PAVING OF WHITEHURST FREEWAY, express highway nearing completion at Washington, D. C., bypasses Georgetown and cobblestoned M Street and provides fast travel to heart of city for northwest city residents and for Virginia traffic.
Wide World Photo

IN FRONT YARD of world's biggest steel plant at Gary, Ind., Carnegie-Illinois Steel Corp. is building 38 housing units to accommodate 456 unmarried workers. In view of subsequent salvage value, dormitories were designed as 6-bedroom houses with shower facilities and central lounge that later can be moved and converted to regular houses. John W. Galbreath & Co., Chicago, holds $292,000 contract for project.

GIANT ARMATURE (below) weighing 178 tons moves through San Francisco on specially-built truck with 74-rubber-tired wheels, and powered by three tractors, one pulling and two pushing. Armature, shipped from General Electric Co.'s plant at Schenectady, N. Y., on an 8-axled, 8-wheeled railroad flat car is part of one of two 149,000-hp. turbo-generators to expand to 360,000 hp. capacity of Pacific Gas & Electric Co.'s steam-operated electric power plant in San Francisco.

PROBABLY NO CONTRACTOR would hire this excavating crew, (below) but they make a pretty picture at traditional ground-breaking ceremonies at Oahe Dam on Missouri River near Pierre, S.D. South Dakota's GOVERNOR GEORGE T. MICKELSON is the energetic pick swinger at the left; MAJ. GENERAL LEWIS A. PICK, Missouri River Division Engineer, heaves a full shovel load; REPRESENTATIVE KARL MUNDT and ROBERT B. HIPPLE, program chairman, are already worn out. We hope this crew gives way to shovels and scrapers, for there are 78,000,000 cu.yd. of rolled fill to be placed in a 230-ft. embankment 9,300 ft. long.



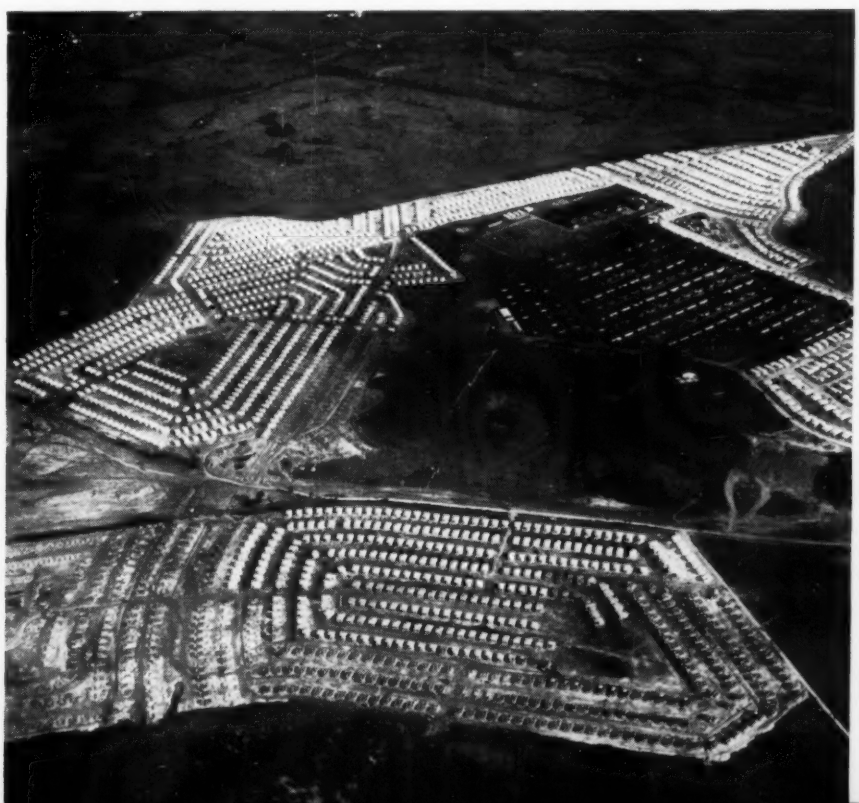


ONLY 2,099,996 YARDS TO GO. Ceremonies mark placement of first 4-yd. bucket of concrete on 2,100,000-yd. Bull Shoals Dam on White River in northern Arkansas, being built by Ozark Dam Constructors for Little Rock District, Corps of Engineers. Prominent in group shown here are HARVEY SLOCUM (slouch hat) general superintendent for contractors, and MAJOR W. J. KLASING, Corps of Engineers, both on platform left of bucket; to right of bucket in foreground are REP. W. F. NORRELL, (Ark.); COL. T. A. LANE, Little Rock District Engineer, and RALPH JOHNSON, engineer in charge for Corps of Engineers. Preliminary articles on project appeared in "Construction Methods," April and May, 1948.

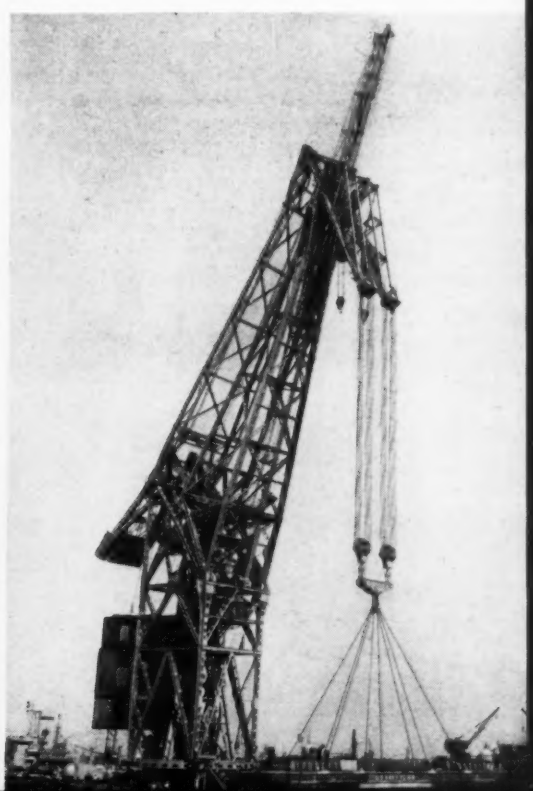
NEW LOOK in dam ground-breaking ceremonies is big blast at start of Folsom Dam on American River in California. Job is under direction of Sacramento District, Corps of Engineers, and this blast starts work of P. L. Ferry & Son, Glendale, Calif., who hold contract for right bank preliminary operations. Wide World Photo

HOUSES BY THE THOUSANDS are being built by I. D. Long, of Charleston, S.C., on new 7,000 single family unit project at Puerto Nuevo near San Juan, Puerto Rico. Houses are flat-roof reinforced-concrete structures built by tamping dry concrete into aluminum wall forms and pouring concrete roofs with skip hoists dumping on to plywood deck forms. Houses are being turned out at rate of 50 per day, cost between $4,000 and $5,000 each.

Wide World Photo



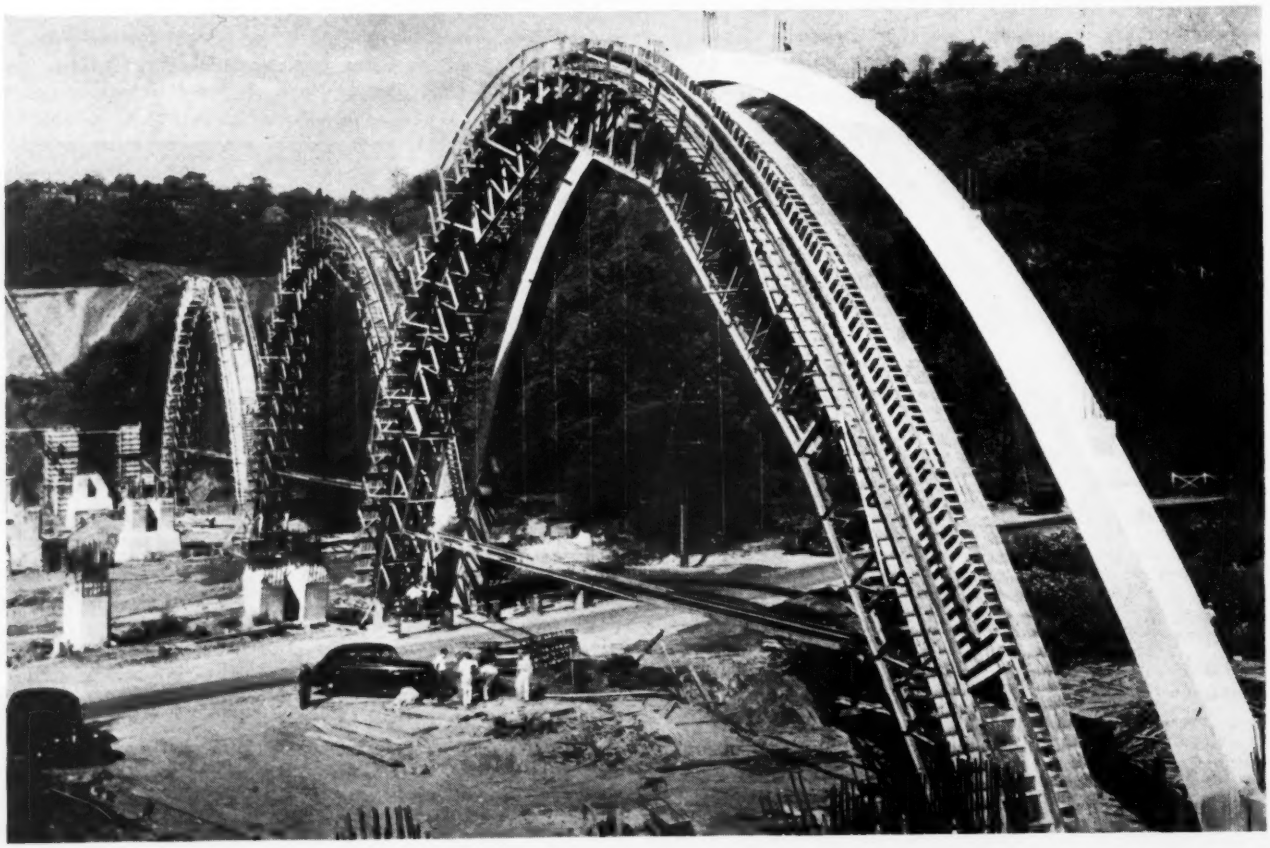
CAPTURED GERMAN FLOATING CRANE, (below) rated at 350 tons capacity, passes underway tests off California coast by lifting 425-ton barge, 25 percent overload. Crane, now commissioned as YD-171 at Long Beach Naval Shipyard, is self-propelling.



HIGH-FLYING PITTSBURGH HIGHWAY

PENN-LINCOLN PARKWAY, Pittsburgh's newest 4-lane superhighway, will approach Squirrel Hill Tunnel on a high viaduct carried by three 175-ft. concrete arches spanning Nine-Mile Run. Forms for the spectacular arch ribs are carried by three sets of Blaw-Knox steel centering, designed for Dinardo, Inc., Pittsburgh contractor on the viaduct.

Dinardo is placing transit-mix concrete in the high-rise ribs by Blaw-Knox bucket handled by a long-boom Manitowoc Speedcrane (right). When a rib is completed, the 30-ton centering is moved sideways on skids (below) without dismantling to location of the next rib. Viaduct, 980 ft. long, will be known as Commercial Ave. Bridge and is costing $1,800,000. East portal of Squirrel Hill traffic tunnel lies in hill in background of lower view.



Compare LaPLANT-CHOATE MOTOR SCRAPERS with crawler tractor rigs . . .

It means higher production capacity and increased profit potential!

Compare before you buy any earthmoving equipment. Compare original price—weight—mobility—speed—power—and production. On every point you will see why LaPlant-Choate Motor Scrapers produce more yardage at the lowest possible cost. Then you will know why more and more contractors are switching to LPC Motor Scrapers. Best of all — you can get prompt delivery, too.

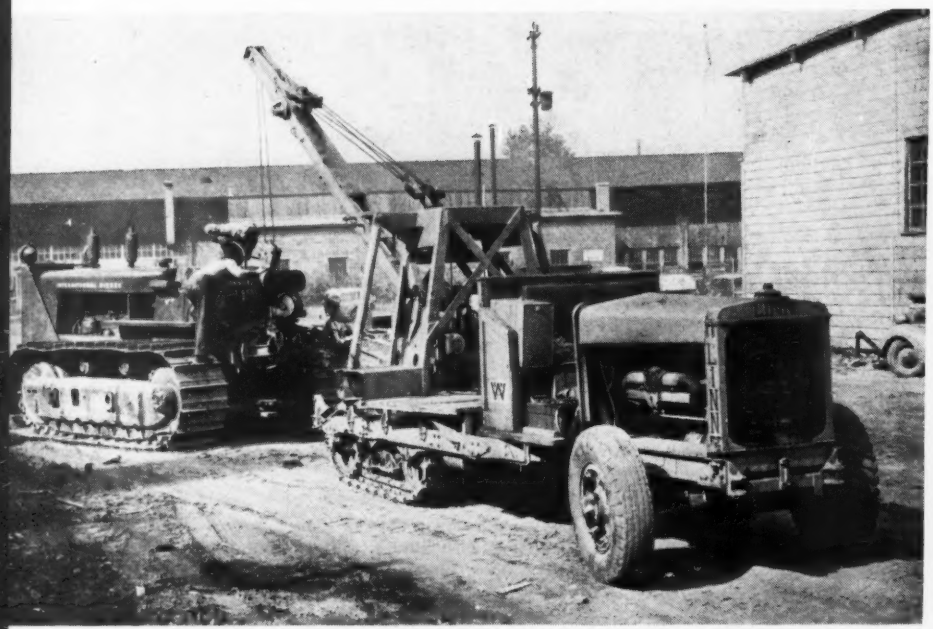
Now is the time to get ahead of your competition—change to rubber-tired scraper hauling units. See your nearest LPC distributor and let him show you why the Motor Scraper is tomorrow's tool for today's job.

LaPlant-Choate Manufacturing Co., Inc.
Cedar Rapids, Iowa
1022 77th Ave., Oakland, Calif.

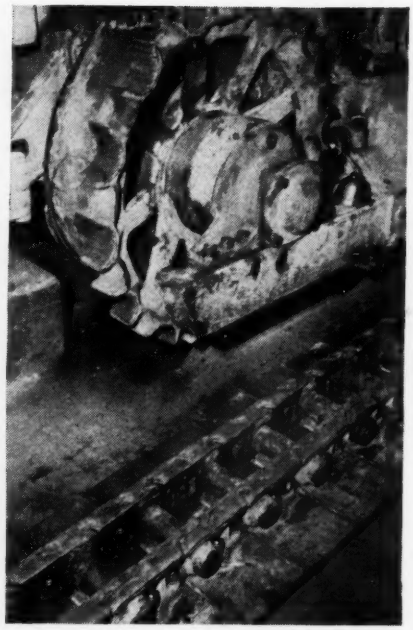
COMPARE	LPC MOTOR SCRAPERS	TRACK TYPE UNITS
Production yards per hr. 1,000′ one-way haul	156 yards	50% less
Capacity struck yards	14	the same
H.P. per struck yd. capacity	16	42% less
Weight	42,500 lbs.	50% higher
Weight per h.p.	189 lbs.	170% higher
Speed	18 m.p.h.	73% slower
Horsepower	225	42% less
Price per h.p.	$119	64% higher
Price	$26,750	only 6% less

LaPLANT-CHOATE

HIGH SPEED EARTHMOVING EQUIPMENT



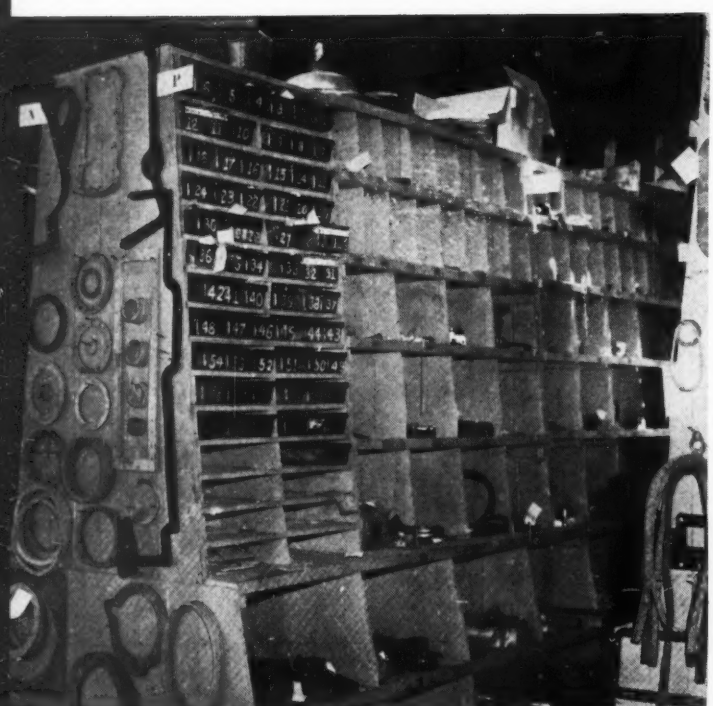
YARD CRANE ON LINN HALF-TRACK starts repair work on tractor by lifting power control unit out of the way at D. W. Winkelman Co. shop at Syracuse, N. Y. Crane saves lots of heavy lifting and jacking on repair of big units.



THIS CONTRACTOR believes in building up worn parts, especially those hard to get. Here grooves of a tractor crawler sprocket have been built up with Fleetweld No. 7 welding rod. Track-pin bushings have been turned 180 deg. to present new surface to sprocket contacts.

EQUIPMENT MAINTENANCE:

An Example of Contractor Operations



LARGE INVENTORY of spare parts is kept at shop in orderly fashion in bins and racks such as these. Every compartment is numbered for card reference and easy identification.

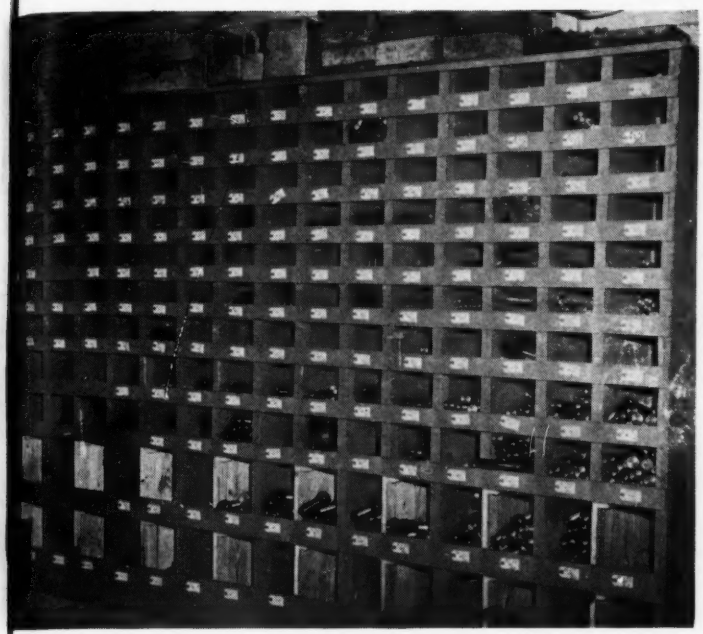
KEEP 'EM ROLLING is the program of every good contractor in respect to his equipment. Good examples of the construction equipment maintenance operations by contractors are the program and layout of the D. W. Winkelman Co., Inc., of Syracuse, N. Y.

The Winkelman Company maintains an extensive central repair department and parts depot at Syracuse. The parts inventory is, at present, way above normal because of difficulty in obtaining certain parts from distributors. Winkelman, to protect himself, has had to build up a big supply of spare parts.

The Syracuse shop is equipped to do all repair work, both heavy and light, that doesn't require machining. Located in a large city blessed with several excellent commercial machine shops, the Winkelman Company believes it is better and cheaper, considering the investment otherwise necessary, to have machine work done outside. They also depend upon distributors and outside shops for most engine repair and overhaul work, and all repairs to large tires.

This leaves plenty for their own shop to do, however. In many instances Winkelman prefers to build up worn parts rather than replace them. Filling out worn grooves on tractor crawler drive and idler sprockets is an example. Also, he turns crawler tread bushings 180 deg. to expose a new surface to the sprockets before replacing both pins and bushings.

Much of the shop work is general routine repairs, such as replacing worn bushings, bearings, gears,



BOLTS AND STUDS are kept well sorted in this special rack. Each bin is marked by item size rather than by part number.

FIELD REPAIR TRUCK is equipped with both gas and electric welding equipment and assortment of tools for emergency work.

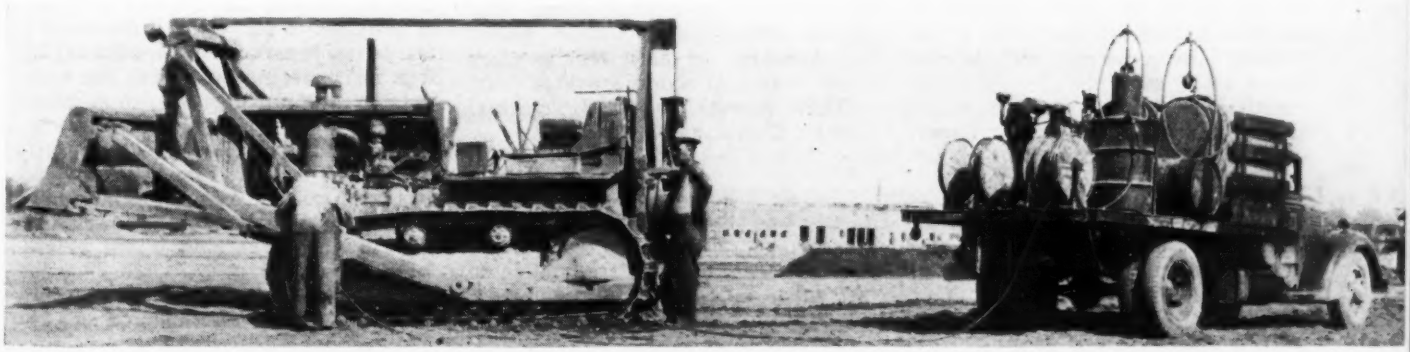
sheaves, clutches and brake bands. The shop is equipped with a crane mounted on a Linn half-track, overhead cranes, welding machines, gas torches, pin press, hydraulic press and steam cleaning outfit.

Routine overhaul of shovels, scrapers, tractors and wagons is done in winter months. During the winter season approximately 50 mechanics are kept busy, more than twice as many as are on the summer force. Equipment transferred from one job to another is often brought into the shop for inspection. Routine overhaul includes thorough steam cleaning and painting. Steam cleaning with Oakite Railroad Cleaner prior to overhaul removes all grease and dirt that would otherwise hamper inspection and repairs.

Each job is equipped for handling light emergency repairs, but for any serious trouble the machine is loaded on to a trailer and wheeled into the main shop. All equipment is carefully and regularly serviced in the field, a program that keeps 'em rolling on the job.

Archie Lapoint is manager of the main shop, and all repair work, both field and shop, is under the general supervision of master mechanic Bob Bird.

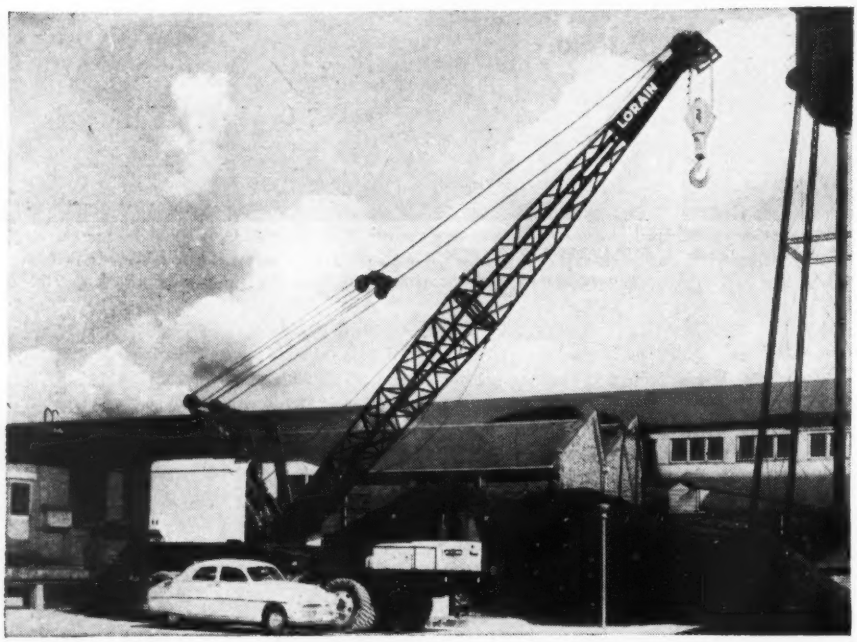
WHILE SHOVEL IS DOWN for lunch hour, it is greased and fueled ready for afternoon run.



EQUIPMENT AT WORK gets greased and oiled at regular intervals by this well equipped lubrication truck. Winkelman, along with all other smart contractors, knows that time spent here reduces time in the shop.

CONSTRUCTION EQUIPMENT NEWS

NOVEMBER 1948 REVIEW of Construction Machinery and Materials



GIANT CRANE—A giant, rubber-tired, 2-engine moto-crane is announced by Thew Shovel Co. It is said to be the largest of its kind ever made. The first unit was bought by Jones and Laughlin Steel Corp. of its Aliquippa Works. It has a safe-rated lifting capacity, on outriggers, of 45 tons at a 12-ft. radius. Weighing 65 tons, its length with boom in travel position over front of carrier is 66 ft. 5 in.; width, outside to outside of tires is 11 ft. 7¾ in.; height, with gantry erected, 19 ft. 5 in., with gantry lowered, 14 ft. MC-820 Moto Crane consists of the carrier and the turntable, or revolving superstructure. Welded steel frame is of multiple straight beam construction for side members which are solid steel 18 in. deep and more than 2 in. thick. Each side member consists of two such beams between outriggers, with the inner beam running the full length of the frame. Side members are joined together to front bumper and outrigger boxes serving as cross-members and welded to the side members as integral construction. Crane is equipped with two Waukesha diesel engines. There are five carrier speeds forward. Rear axles are double reduction gear driven, and are among the largest made. At full load speed the turntable engine is rated at 164 hp. Boom is all-welded design with bolted butt splices. Main chord members are of high tensile alloy steel. Standard booms are 50 ft. long. **—Thew Shovel Co., 1410 Terminal Tower, Cleveland 13, Ohio.**

BUILDING WIRE — A new and improved type of rubber covered braided building wire (R, RH and RW) has just been announced. Known as "GLAZON" it is covered with a sheath woven of inert, inorganic fibers of high dielectric strength, finer than a hair. These fibers, and the finished sheath are flexible, much stronger than cotton or rayon, cannot burn, are unaffected by moisture or temperature changes, cannot rot, are immune to all ordinary acids and alkalis and repellent to fungus and rodents. "GLAZON" building wire is also smaller in diameter and lighter in weight than conventional building wires. These factors, plus its smooth slick finish, have reduced "fishability" problems to a minimum. Triangle is now manufacturing "GLAZON" Building Wire in #14 and #12 B & S, underwriters approved—the sizes now in greatest demand. Larger sizes will be announced soon.**—Triangle Conduit and Cable Co., New Brunswick, N. J.**

ALUMINUM WINCH FOR SCAFFOLD—Saf-T-Swing stage includes two winches (each with attached stirrup and 150 ft. of steel cable) guard rail and center post. Platforms up to 2½x20 ft. in size may be employed. Loading up to 25 lb. per sq. ft. is safely handled with rated capacity of 625 lb. per winch. Simple two-way crank operation permits raising or lowering of platform at rate of 20 ft. per min. Units weigh only 55 lb. each. Winch drum, frame, crank handle and stirrup are all aluminum. Gear and brake mechanism is entirely inclosed to exclude foreign matter. A 3-in. rubber roller is mounted on the inside edge of the stirrup to prevent walls being marred by scaffold.**—Safway Steel Products, Inc., Milwaukee 13, Wis.**

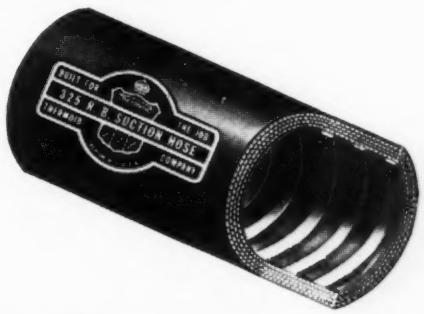
LO-BIN BATCHER—Stressing low over-all height, the Lo-Bin Batcher is designed to serve the three standard portable mixers. With adjustable legs for lowering or raising bin and batcher, the unit has heaped storage capacity of 30 tons and measures 9½ ft. high. Struck capacity without top panels is 8 tons, and height is 7½ ft. Hopper capacity is 22 cu. ft. Bin has 45-deg. bottom slopes and double 42-in.-wide discharge gates. Two weigh beams in the trolley batcher scale have a 1,600-lb. capacity. Major poise weight of weigh beam drops in notches at 100-lb. intervals. Minor poise can be set to 2-lb. intervals.**—C. S. Johnson Co., Champaign, Ill.**

Thermoid Water Suction Hose

Made in a Type to Suit Every Job

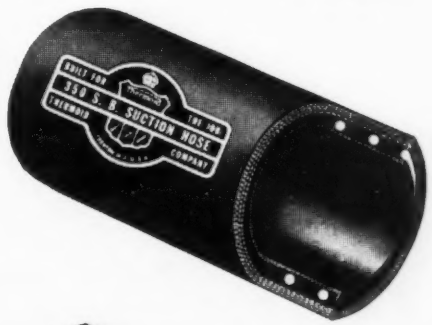
Water Suction Hose is generally subjected to rough usage. Thermoid has studied carefully the service conditions under which it is used and has designed several types from which you can pick the one best suited to the job you have to do.

For the Toughest Kind of Duty Use Thermoid #325 Type



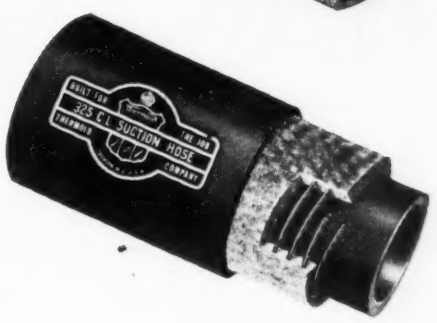
This hose is made in smooth or rough bore. Use smooth bore when sand, dirt or other abrasives are in the water to be handled. Use the more economical rough bore type when the water is free of abrasives. Each type has a high quality tube, strong wire reinforcing, then plies of specially woven duck with a weather and abrasion resisting cover. Supplied in sizes 1¼" to 6" in lengths up to 50 ft.

For Less Severe Service Use Thermoid #350 Type



Somewhat lighter in construction, but with plenty of long life quality for less severe jobs. This hose comes in smooth or rough bore, wire and duck reinforced, with weather and wear resisting cover. Supplied in sizes 1½" to 6" and in lengths up to 50 ft.

For Normal Light Duty Use Thermoid Type #325-CL



It's an economical hose for normal light duty service. The water way is smooth, resistant to action of gritty particles, the reinforcement of high carbon steel wire interwoven with heavy cotton yarn, cover of sufficient thickness and strength to resist abrasion and rough handling. Furnished in sizes of 1½" to 6", in lengths up to 50 ft.

Other types of Thermoid Suction Hose include Oil Suction, Sand Suction, Agricultural, Hard Rubber and Fire Engine. Catalog information on request.

The Thermoid line includes: Transmission Belting • F.H.P. and Multiple V-Belts • Conveyor Belting • Elevator Belting • Wrapped and Molded Hose • Custom Molded Products • Industrial Brake Linings and Friction Materials.

Thermoid Company

Main Offices and Factory • Trenton, N. J., U. S. A.
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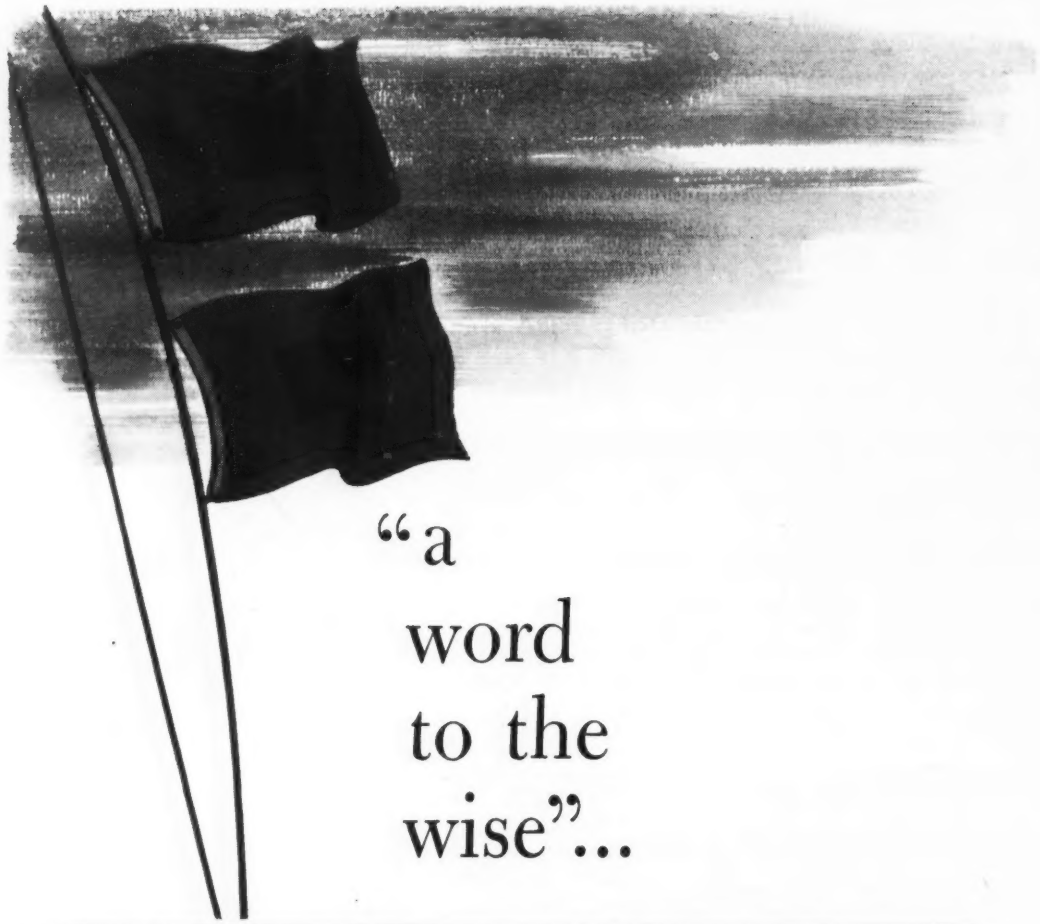
Automotive and Industrial Rubber Products • Friction Material • Oil Field Products



"a word to the wise"...

STORM WARNINGS ARE FLYING

Cold and wet weather ahead means *you* will need tarps—and when you need them . . . you want them PRONTO!

Send out your S. O. S. to your dependable Wenzel distributor. He will fill your tarpaulin requirements immediately from his complete stock.

For cold and rain . . . **SPECIFY** ***Wenzel "Para" Waterproofed Tarpaulins.***

Processed with a genuine parraffin base—Para Tarpaulins contain no oil or clay. They are air-dried . . . never exposed to damaging heat. Para Tarpaulins are completely waterproof, stronger and tougher . . . to give you PLUS-SERVICE.

For added Fire-Protection . . . **SPECIFY** ***Wenzel Fire and Water Resistant Tarpaulins.***

These new, high-quality Tarpaulins are processed by a new-improved method. Guaranteed to give you longer service and greater protection against fire-loss.

Full breaking strength—quaranteed new . . . not Government Surplus. Duck woven . . . treated . . . after Sept. 1, 1948. No risk of fabric weakening due to long storage and prolonged chemical action.

H. WENZEL TENT & DUCK CO.
ST. LOUIS, MISSOURI

For 61 Years . . . America's Foremost Manufacturer of Quality Tarpaulins

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Stillwell Supply Corp., Long Island City
Trevor Corp., Buffalo
R. B. Wing & Son Corp., Albany
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Dale & Rankin, Inc., Newark
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Hudson Supply & Equip. Co.
MARYLAND
General Supply & Equipment Co., Inc., Baltimore
NORTH CAROLINA
Constructors Supply Co., Durham
Contractors Service, Inc., Charlotte
VIRGINIA
Rish Equipment Co., Roanoke
WEST VIRGINIA
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Austin Supply Co., Inc., Philadelphia
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OHIO
Rish Equipment Co., Cincinnati
The W. T. Walsh Equipment Co., Cleveland
MICHIGAN
Contractors Machinery Co., Grand Rapids
WISCONSIN
Prime-Best, Inc., Milwaukee
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Minneapolis Equipment Co., Minneapolis
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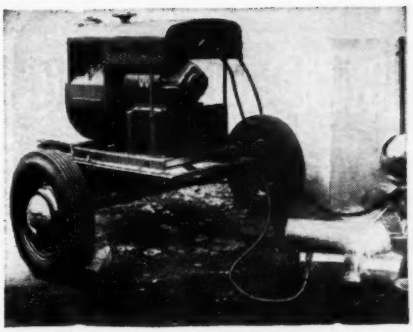
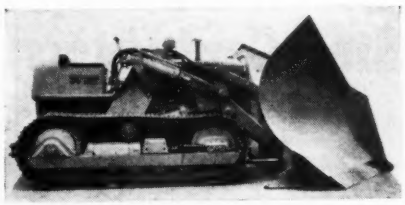
Pecaut Industrial Supply Co., Sioux Falls
NEBRASKA
Anderson Equipment Co., Omaha
IOWA
Harry Alter & Sons, Davenport
Pecaut Industrial Supply Co., Sioux City
ILLINOIS
Becker Equipment & Supply Co., Chicago
Joseph Behr & Sons, Rockford
INDIANA
Standard Equipment & Supply Corp., Hammond
MISSOURI
Brown-Strauss Corp., Kansas City
Machinery & Supplies Co., Inc., Kansas City
The Victor L. Phillips Co., Kansas City
MISSISSIPPI
Contractors Material Co., Inc., Jackson
LOUISIANA
Pelican Well Tool & Supply Co., Shreveport
TEXAS
J. E. Ingram Equipment Co., San Antonio
OKLAHOMA
Mideke Supply Co., Oklahoma City
The Victor L. Phillips Co., Oklahoma City
ARIZONA
Industrial Equipment Co. of Arizona, Phoenix
CALIFORNIA
Industrial Equipment Co. of South California, Los Angeles
Standard Machinery Co., San Francisco



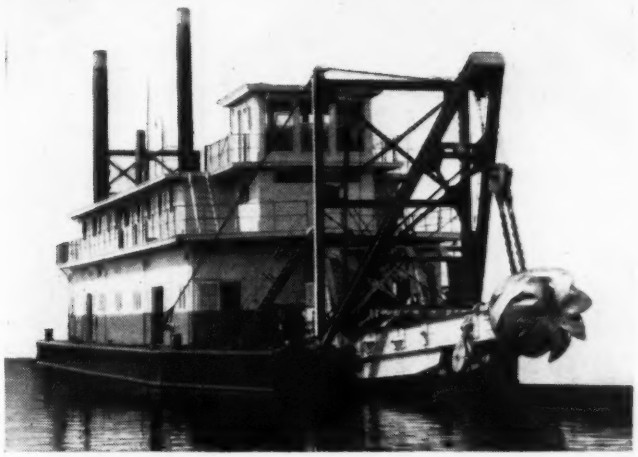
LIGHTWEIGHT WELDER—Engine-driven dc. welder is powered by Wisconsin air-cooled engine, speed-ratio-coupled by a V-belt drive to a G.E. generator with 50 percent duty cycle. Unit weighs 660 lb. for a maximum of 250 amp. of welding current. Fully calibrated dual control permits accurate setting of desired welding current before arc is struck. Welder has built-in auxiliary power outlet of 110 v. for operation of lights and power tools. Over-all length is 44⅛ in. Width is 24½ in., and height is 35⅜ in. Stands on full length rigid welded steel base. For greater portability can be furnished mounted on a two wheeled pneumatic-tired trailer.—**General Electric Co., Schenectary 5, N. Y.**

HEAT AND COLD PROTECTION—The "Kool Shade" sun screen deflects up to 90 per cent of the sun's rays outside the window. It is said to keep rooms as much as 15 or 20 deg. cooler. "Storm Shade," on the other hand, includes glass storm windows inclosed in light, weather-tight aluminum frames. In one installation it replaces storm windows, weather-stripping, insect screen and other shading devices.—**Ingersoll Steel Division, Borg-Warner Corp., Plymouth Court, Chicago 4, Ill.**



SNOW PLOW—V-type hydraulically operated snow plow and a 2-cu.yd. snow bucket have been added to accessories for Allis-Chalmers HD-5 crawler tractor. Dimensions of plow are: width on ground, 116 in.; width at top, 128 in.; height of V in front is 44 in. and in rear 66 in. Snow bucket is 96 in. wide and has a 2-cu.yd. capacity. Both units are sold exclusively by Allis-Chalmers dealer organizations. Both plow and snow bucket are manufactured by Tractomotive Corp., Deerfield, Ill.—**Allis-Chalmers Mfg. Co., Tractor Division, Milwaukee, Wis.**

SLASH YOUR DREDGING COSTS with ELLICOTT HYDRAULIC DREDGES



● Ellicott is the only organization with the experience and equipment to build any size dredge from 6 to 30 inches. Shown is a 16-inch deep channel Diesel-powered Dredge.

WHATEVER your requirements, whether dredging a river channel, filling a swamp, or producing sand and gravel, your cost per cubic yard of material goes way down with an Ellicott Hydraulic Dredge.

That's because each Ellicott Dredge, from 6-inch to 30-inch machines, is designed to meet your needs. It has the right cutting head for material to be worked, the proper pump for length of the line to the disposal area—completely engineered from stem to stern to operate at the lowest cost.

Ellicott has built hydraulic dredges since 1885 and is the only organization in the world devoted exclusively to hydraulic dredge construction. When you specify Ellicott you get operating economy, because all dredge components are designed, built and delivered by Ellicott—all under one contract!

No matter if you wish to assemble your dredge from Ellicott components and plans, or want the dredge delivered complete, Ellicott is prepared to submit estimates without obligation. Write today for full information on Ellicott Dredges.

● **COMPLETE LINE** from 6 to 30 inch equipment for all hydraulic dredging requirements.

● **UNDIVIDED RESPONSIBILITY**—Designed, built, delivered under one Ellicott contract.

● **63 YEARS OF EXPERIENCE** with hydraulic dredges.

● **PROVED PERFORMANCE** in the U. S. A. and abroad.

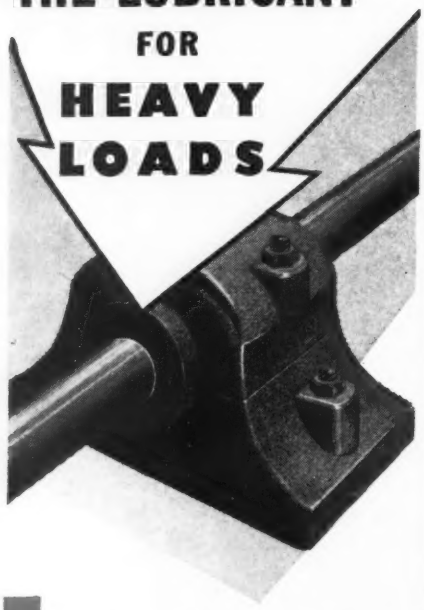
ELLICOTT HYDRAULIC DREDGES

any type—any size—any service

ELLICOTT MACHINE CORPORATION

1605 Bush Street, Baltimore, Maryland, U. S. A.

THE LUBRICANT FOR HEAVY LOADS



LUBRIPLATE Lubricants are a paradox. They not only possess enormous film strength to withstand the heaviest loads but they function with minimum drag, hence conserve power. The "stay-put" quality of these unique lubricants means less frequent application and less lubricant consumption. Yes, they are most economical too. Write for particulars.

LUBRIPLATE

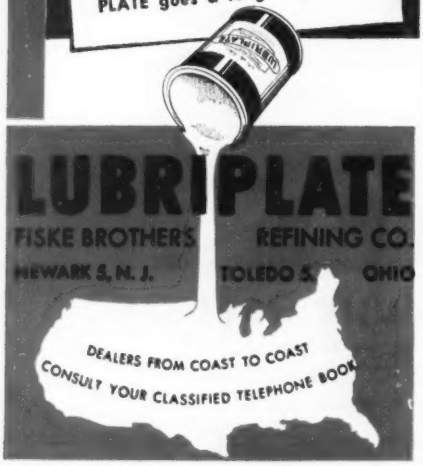
Lubricants definitely reduce friction and wear to a minimum. They lower power costs and prolong the life of equipment to an infinitely greater degree. LUBRIPLATE arrests progressive wear.

LUBRIPLATE

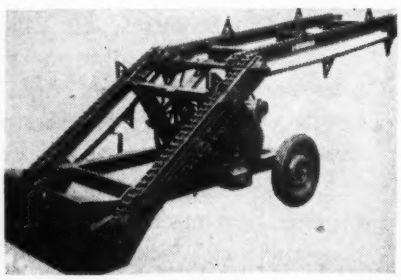
Lubricants protect machine parts against the destructive action of rust and corrosion. This feature alone puts LUBRIPLATE far out in front of conventional lubricants.

LUBRIPLATE

Lubricants are extremely economical for reason that they possess very long life and "stay-put" properties. A little LUBRIPLATE goes a long way.

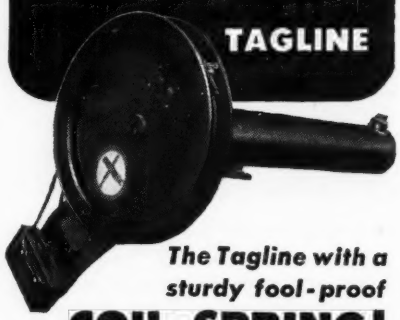

LUBRIPLATE
FISKE BROTHERS REFINING CO.
NEWARK 5, N. J. TOLEDO 5, OHIO
DEALERS FROM COAST TO COAST
CONSULT YOUR CLASSIFIED TELEPHONE BOOK

PNEUMATIC SPONGE PUMP—A high-head "mopping up" pump handles sand, pulverized rock, etc., passing solids up to ⅝ in. Lowest operating liquid level is within 3 in. of the sump base. Furnished in single- or two-stage construction, the latter can be separated for lower head service or used as two pumps in parallel. Operated by a variable-speed motor and having impellers mounted at the extreme lower end, the pump's capacity range at 90 psi. is 25 to 300 gpm.; head range is 25 to 300 ft.—**Byron Jackson Co., Pump Division, Box 2017 Terminal Annex, Los Angeles 54, Calif.**



LOG LOADER—A loader designed for loading, stacking and otherwise handling 8-ft. logs has been introduced under the trade name of Triad Special Loader by Northwest Machine Works, Portland, Ore. The original model was designed for Rayonier, Inc., New York, operators of pulp mills in the Pacific Northwest and Florida. The device is of steel contruction, center balanced on steel axle with standard heavy-duty wheels and pneumatic tires for mobile operation. The elevator section operated by a pneumatic hoist attains a maximum height of 12 ft. for stacking or loading. It is powered by its own gas engine with chain drive and built-in clutch and gear reduction. The conveyor is spaced with 8-in. grousers. The machine has an over-all length of 17½ ft. and weighs 3,500 lb.—**Northwest Machine Works, Portland, Ore.**

RUD-O-MATIC TAGLINE



The Tagline with a sturdy fool-proof

COIL SPRING!

RUD-O-MATIC Taglines are built with a spring tension powerful enough to hold a clam shell bucket steady under the toughest conditions – and with boom at any angle. Compact, easily installed – there are no weights, tracks, pins, or carriages – and fewer sheaves means a definite saving in wear. Eight different models to fit all bucket sizes. See your equipment dealer – or write –

McCAFFREY-RUDDOCK Tagline Corporation

2131 East 25th St., Los Angeles 11, Calif.

STEEL CONSTRUCTION

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TERRY Steel Contractors Incorporated

BUILDINGS BRIDGES
TOWERS TANKS

STEEL FABRICATORS ERECTORS

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your inquiries will warrant our prompt attention

103 PARK AVENUE
NEW YORK 17, N. Y.
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job-proved wire ropes

There's a Macwhyte rope
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Use PREformed Whyte Strand for easy handling and longer service.

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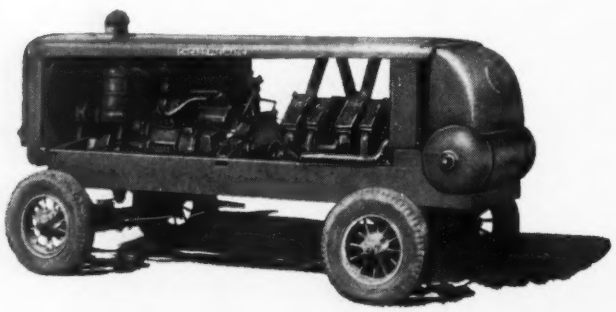
For every construction job there's just the right

CP Equipment

Every item in the wide line of Chicago Pneumatic's construction equipment can be depended upon for efficient and economical performance, because each one has been developed to meet specific requirements.



At any speed CP PORTABLE AIR COMPRESSORS are fuel-thrifty, because the CP Gradual Speed Regulator adapts engine speed to air demands, holding fuel consumption to a minimum. This and other CP features effect fuel savings of 15% to 35%. CP PORTABLE COMPRESSORS are available in gasoline-driven models of 60, 105, 160, 210 and 315 c.f.m. actual capacity, and in Diesel-driven models of 105, 160, 210, 315 and 500 c.f.m.

For general excavation, road work, shaft sinking, or quarrying, the 45-pound CP-32 SINKER DRILL is ideal. With high drilling speed, strong rotation and good hole cleaning qualities, it is easy on air consumption. The complete line of CP SINKER DRILLS range from the 28-pound CP-22 to the 119-pound CP-60N.

Designed to provide fast and easy operation of the more powerful CP drifter drills, the lightweight G-200R WAGON DRILL reduces drilling costs — drills holes at any angle—is easily moved over uneven ground. Available with CP-50N (3″), CP-60N (3½″), or CP-70 (4″) Drifters.

CHICAGO PNEUMATIC TOOL COMPANY

General Offices: 8 East 44th Street, New York 17, N. Y.

PNEUMATIC TOOLS • AIR COMPRESSORS • ELECTRIC TOOLS • DIESEL ENGINES
ROCK DRILLS • HYDRAULIC TOOLS • VACUUM PUMPS • AVIATION ACCESSORIES

HAND WELDING SHIELD—Recommended where a welding helmet is not practical a lightweight, seamless hand welding shield is available with Noviweld or Filterweld glass plates which insure eye protection. Glass holder is insulated and rivetless. Fiber handle is 5½ in. long, and, without glass, the entire shield weighs only 11 oz.—**American Optical Co., Southbridge, Mass.**

LIGHT WEIGHT MAGNESIUM LADDERS—Made of Dow metal, new designs in magnesium ladders include extension, straight, and step, weighing only 2/3 to ½ as much as comparable wooden models. Easy to move and handle. Do not chip, splinter, warp, or dry out when exposed to heat or rot in damp weather. Fabricated from extruded sections which are readily joined.—**Magnesium Products Corp., 150 Broadway, New York, N. Y.**

PIPE-FITTING COVERS—Designed for use with the recently introduced Foamglas pipe insulation, new pipe-fitting covers are particularly suitable for use where exact temperature control is required, whether heat is to be retained or excluded. The pipe-fitting covers are being manufactured in all sizes for ells, tees, unions, valves, elbows and flange covers. Being of true glass composition, they retain their original insulating efficiency permanently. Foamglas is not affected by humidity, is waterproof, vaporproof, fire retardant and highly resistant to fumes, acids, and many other elements which cause other materials to lose insulating values.—**Pittsburgh Corning Corp., 632 Duquesne Way, Pittsburgh, Pa.**

To meet Vibrated Concrete Specifications

STOW CONCRETE VIBRATOR

If your concrete placement job demands a strong bond between concrete and reinforcement . . . increased flexural and compressive strength . . . greater density and watertightness — choose a *reliable* STOW Concrete Vibrator for the task.

STOW Vibrators last a long time because:

- The famous STOW Flexible Shaft with its tough music wire core and abrasion-resistant casing is engineered for rough usage.
- The Vibrator Head has a wear-resistant steel case; precision, high-speed ball bearings; newly designed eccentric weight that greatly reduces the load on the bearings—a sturdy overall construction that provides years of rugged service.
- Oil lubrication of the Head with its leak-proof shaft seal insures efficient operation in warm OR cold weather.
- A guard ring carrying-handle protects the exhaust muffler, carburetor and air cleaner from accidental damage—a protective feature that eliminates many motor repairs . . . keeps your Vibrator working.

STOW Vibrators come in a variety of sizes and speeds. See them at your regular equipment supplier or write today for catalog 4610 describing the STOW Vibrator particularly suited to your job.

STOW Manufacturing Co., Inc., 31 Shear St., Binghamton, N.Y.

DIG REAL DIVIDENDS

WELLMAN

Williams Type

Welded Buckets

Operators prefer the Wellman Bucket for its balance, easy handling, and digging power. Owners prefer the Wellman Bucket for its bigger payloads, lower maintenance cost. These features are not accidental. Wellman pioneered in welded construction of rolled steels which make these buckets lighter, stronger, for greater yardage at lower costs. In all types and sizes, you'll do better with a Wellman!

There's a Wellman Bucket for every service

THE WELLMAN ENGINEERING COMPANY

7017 CENTRAL AVENUE CLEVELAND 4, OHIO

On 1,000,000-yd. J

John O'Keefe handles 600,000 yards with 5 *TOURNAPULLS*...

John O'Keefe, De Pere, Wisconsin contractor is using 5 high-speed, rubber-tired Tournapulls to speed completion of a new Wis.-Minn. Bridge Approach on U.S. 12 near Hudson, Wis. Job calls for borrowing blow sand from a cut at top of bluff . . . then drifting material into river at end of fill.

Modernizes Tournapull Fleet with 2 electric rigs

To cut costs in the abrasive blow sand assure high-speed production, O'Keefe put 3 of his veteran, rubber-tired Super C Tournapulls on the job . . . then added 2 new electric-control C Tournapulls to his fleet. "These new Tournapulls beat anything built yet," said Foreman Bob O'Keefe. You'll see why, when you take a look at their performance record.

Deliver 10 Loads an hour on 5,000' Round Trip

Loading down grade, O'Keefe's electric-control Tournapulls got 11 pay yards of blow sand in 75' . . . high-balled it to the fill . . . spread their loads and returned to top of cut every 6 minutes. That's 10 trips an hour per rig on the difficult 5000' cycle. Instant speed selection gave fast acceleration to 17.3 m.p.h. Constant-mesh transmission eliminated gear-shifting delays throughout cycle for higher average speeds. Giant 21.00 x 25 low-pressure tires, plus power-proportioning differential, kept C's from digging in on soft spots.

Like Contractor O'Keefe, a LeTourneau user since 1936, you'll find it pays to modernize your fleet with these new electric-control Tournapulls. Their production performance will amaze you. Ask your LeTourneau Distributor to estimate production and savings possible on your job. CALL HIM TODAY!

Send for Complete Facts

To: R. G. LeTOURNEAU, Inc., PEORIA, ILL. Please send information on "C" TOURNAPULL:

☐ Specifications ☐ Price ☐ Delivery ☐ Would like job analysis on present operations

NAME..... TITLE.....

COMPANY..... TYPE OF BUSINESS.....

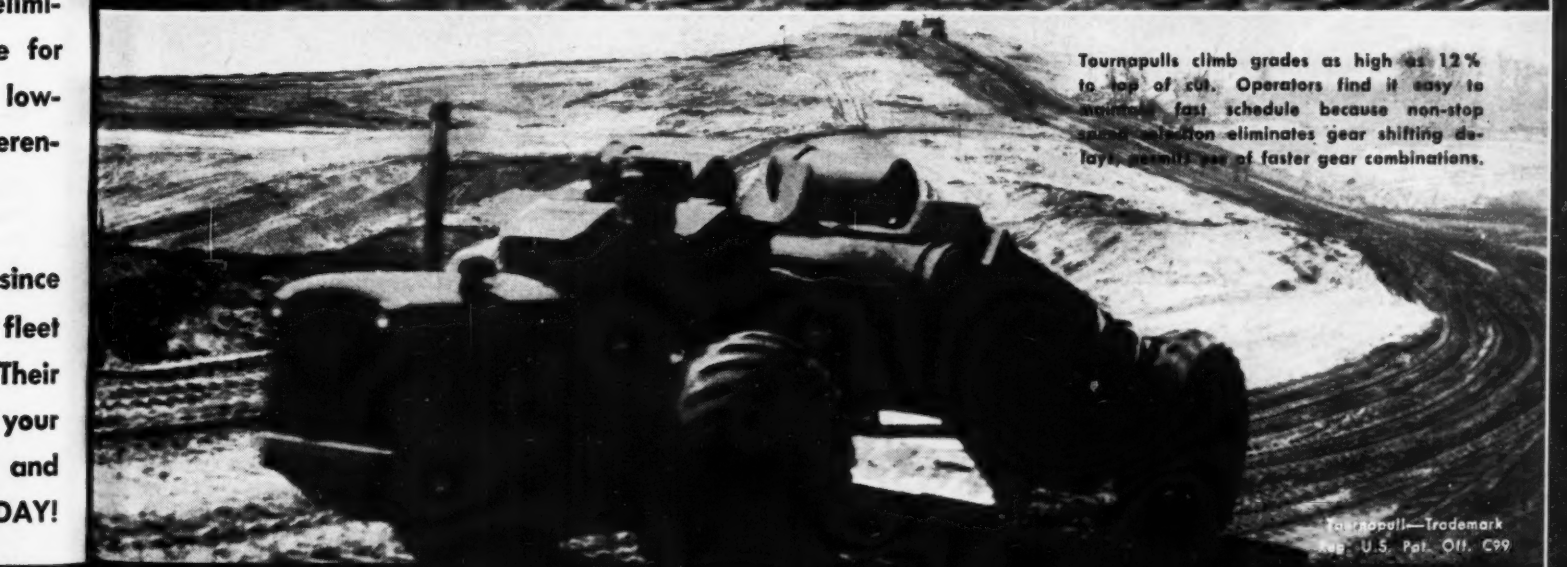
STREET..... CITY, STATE.....

Would also like information on ☐ 7-yard "D" ROADSTER ☐ Big 30-yard "B" TOURNAPULL

...yd. Wis.-Minn. BRIDGE APPROACH

Contractor O'Keefe keeps haul roads well maintained to take full advantage of C Tournapulls' 17.3 m.p.h. speeds. Powerful, disk-type air brakes enabled operators to use top speed with complete safety.

At river end of fill Tournapulls spread their loads in 18 seconds . . . then made sharp 90° positive power steer turns. Their constant-power pull through Tournamatic differential gave plenty of traction in the soft, loose blow sand.



Tournapulls climb grades as high as 12% to top of cut. Operators find it easy to maintain fast schedule because non-stop speed selection eliminates gear shifting delays, permits use of faster gear combinations.

Tournapull—Trademark Reg. U.S. Pat. Off. C99

LE TOURNEAU PEORIA, ILLINOIS

HIGH-SPEED RUBBER-TIRED

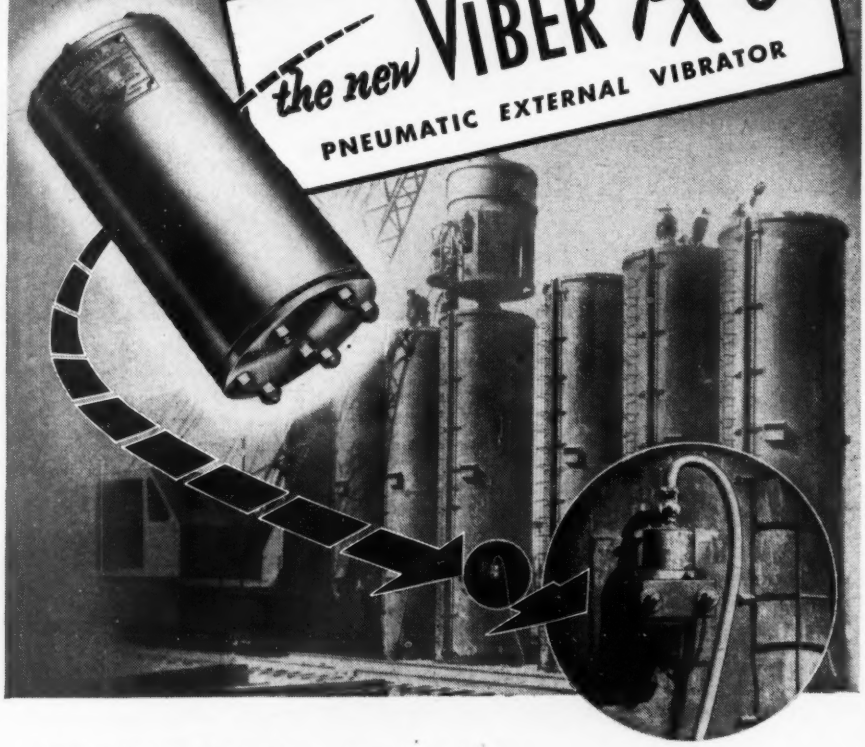
TOURNAPULLS

MORE YARDS PER HOUR WITH RUBBER-TIRED POWER

NOW... for every EXTERNAL VIBRATION problem...

the new VIBER MODEL PX-6

PNEUMATIC EXTERNAL VIBRATOR



The Viber Model PX-6, primarily designed for concrete pipe manufacture, has since proven equally effective in other fields such as in the manufacture of concrete products, and in the handling of dry materials.

5 Reasons for Outstanding Versatility in the PX-6

1. Operates at desired amplitude over a wide range.
2. Operates at desired speed over a wide range.
3. Produces marked improvement in the manufacture of concrete pipe from the smallest to the largest.
4. With proper balance of amplitude and speed, greatly increases the life of the forms.
5. May be mounted at any angle.

SPECIFICATIONS

SIZE: Diameter 5½ inches; length 12 inches.

NET WEIGHT: 40 pounds.

ECCENTRIC WEIGHT: Available over a wide range of sizes.

VIBRATING SPEED: Desired speeds are obtained by regulation of the air pressure.

POWER: Dependable vane type pneumatic motor.

COOLING: Cooled by circulation of exhaust air through the housings.

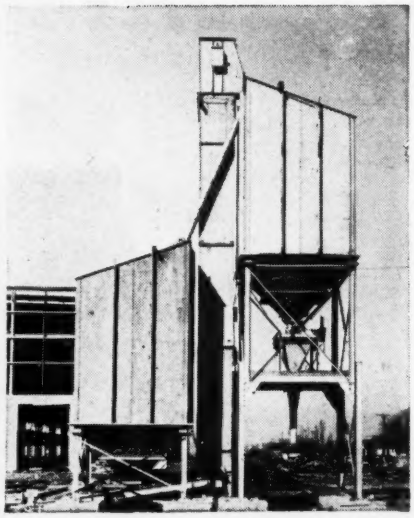
Mounting Clamp, Carrying Handle
Available as extra equipment.

CLAMP HANDLE

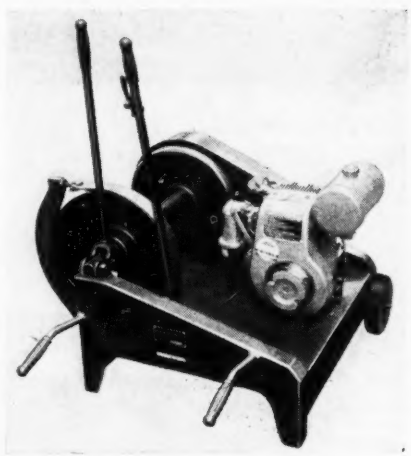
For complete details of the VIBER Model PX-6 Pneumatic *External* Vibrator—or assistance on any concrete placement problem involving *internal* vibration—*write or wire:*

VIBER CO CONCRETE VIBRATORS

EST 1931 Dept. 19, 726 South Flower Street · Burbank, California



PORTABLE CEMENT PLANT—Improved portability and use of an auxiliary bin are features of a bulk cement batching plant. An undertrack screw feeder, 20 ft. 6 in. from hopper bottom to elevator, enables installation of a low-level auxiliary bin on the car-unloading side of the elevator. An overflow chute passes cement from the main or batching bin to the auxiliary bin, and the latter has a side gate for passing material to the screw feeder and thence by elevator to the main bin. The entire bin section is a one-piece welded-assembly. Auxiliary and main bins are of the same design and are furnished either in 200-bbl. or 400-bbl. sizes, giving total plant storage capacity of 200, 400, 600, or 800 bbl.—**Blaw-Knox Co., Pittsburgh, Pa.**



ROOFER'S HOIST—Model 500 develops 500-lb. single-line pull at 200 ft. per min. as standard rating. Optional ratings from 650 lb. at 150 ft., to 200 lb. at 500 ft. available on order. Hoist is powered by 4.2-hp. single-cylinder air-cooled gasoline engine. Weighing 410 lb., equipped with pressed steel wheels and wheelbarrow-type handles, hoist is easily moved by one man.—**American Hoist & Derrick Co., St. Paul 1, Minn.**

Lightweight

WITH A HEAVYWEIGHT PUNCH

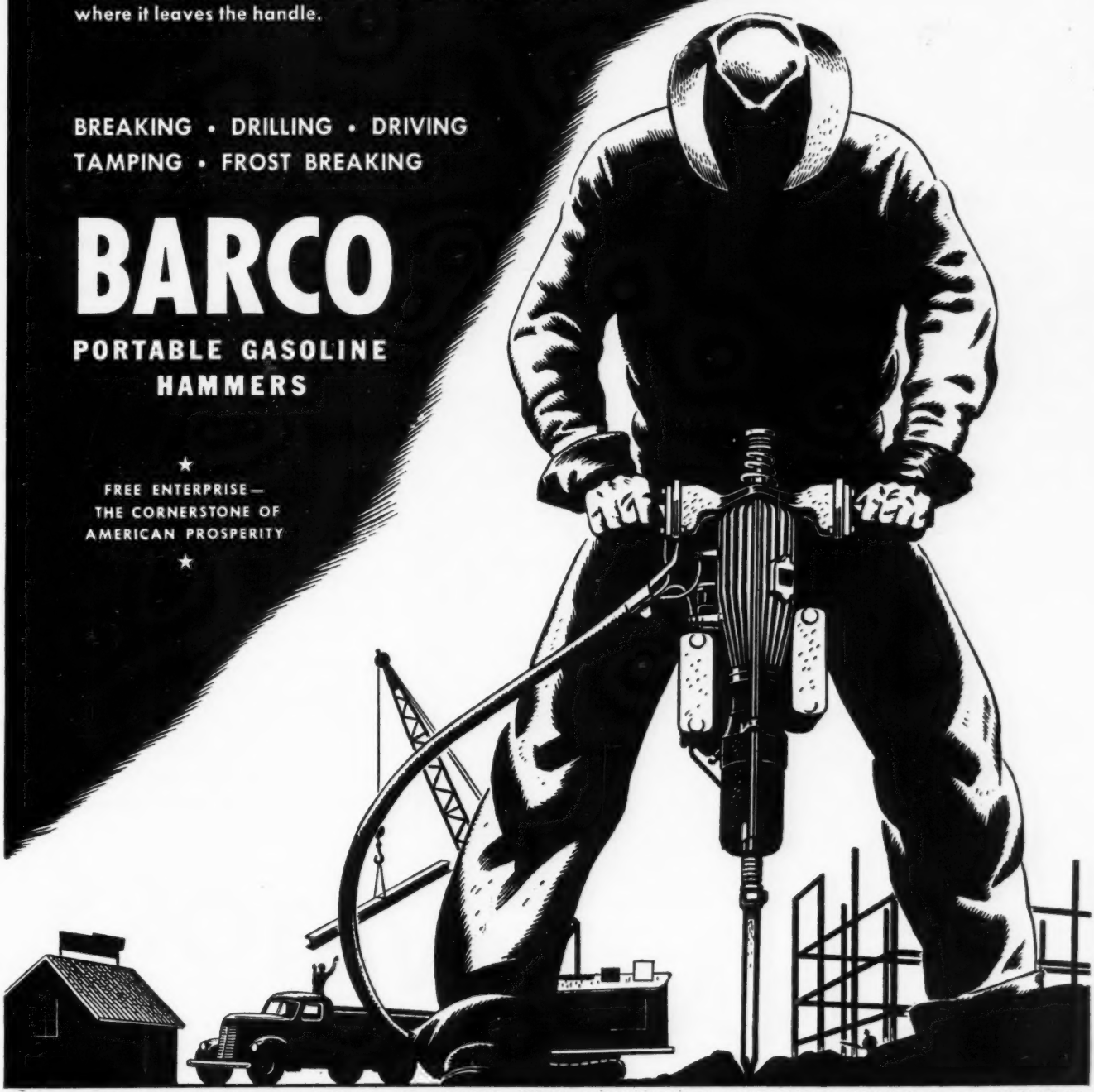
For a hammer of its weight, the new Barco delivers a mighty powerful wallop. Compact, self-contained, it is carefully built to do dozens of different hammer jobs, even the most severe. More speed, too, has been built into Barco. The new carburetor valve is easier to operate, and the entire hammer is easier to handle because of a new method of holding the cable which also cuts down wear and tear on the cable where it leaves the handle.

BREAKING • DRILLING • DRIVING
TAMPING • FROST BREAKING

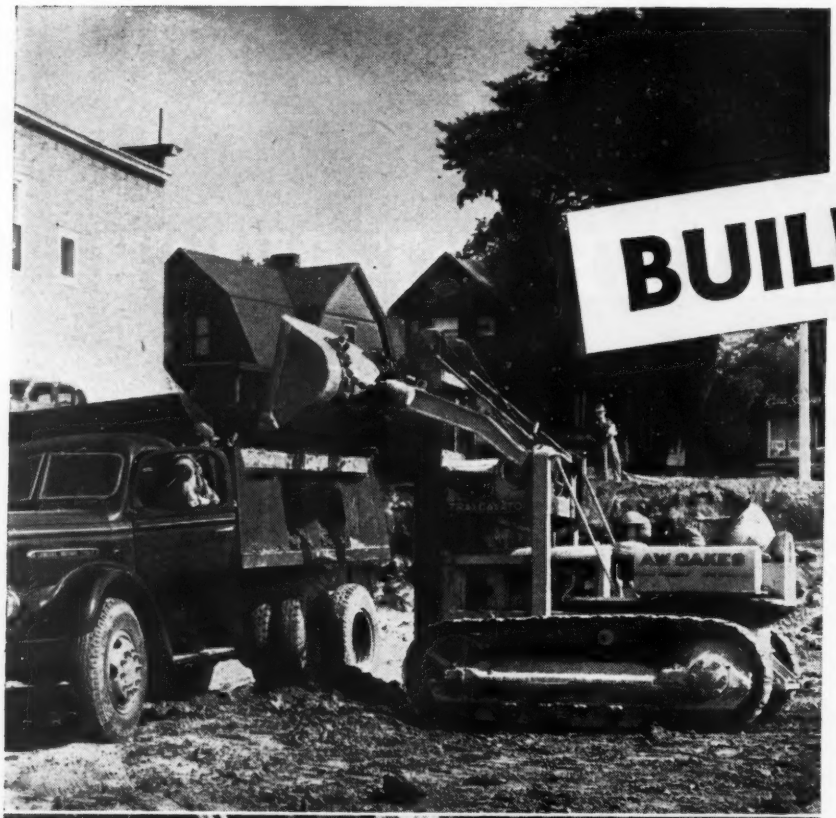
BARCO

PORTABLE GASOLINE HAMMERS

★
FREE ENTERPRISE—
THE CORNERSTONE OF
AMERICAN PROSPERITY
★



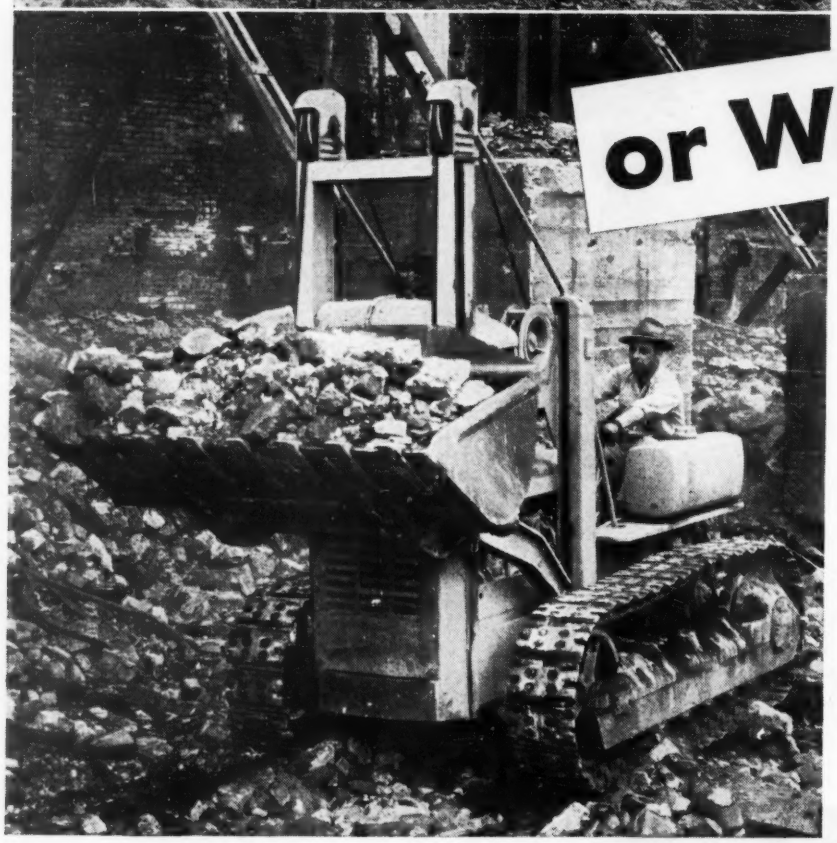
Write to BARCO MANUFACTURING COMPANY, 1812 WINNEMAC AVENUE, CHICAGO 40, ILLINOIS
IN CANADA: THE HOLDEN CO., LTD., MONTREAL, CANADA



BUILDING . . .

TRAXCAVATORS are the perfect tools for excavating, loading, grading and leveling at new construction sites. This TRAXCAVATOR is loading trucks as it excavates for a new super-market in Racine, Wisconsin.

Builders and contractors also make great use of TRAXCAVATORS for constructing streets, alleys and roads — in handling materials at batch plants, stockpiling, clean-up, and doing general drawbar work.



or WRECKING

Wrecking work is tough on men and machines. It takes a rugged TRAXCAVATOR to handle debris, twisted metal, broken brick and masonry. The key wrecker on this Brooklyn, New York, job is the TRAXCAVATOR which helps tear down walls, digs and loads debris and cleans up the wreckage mess.

Whether you're building or wrecking, solve your equipment problems by calling your Trackson — "Caterpillar" dealer or write direct to Trackson Company CM-118, Milwaukee 1, Wisconsin.

with TRAXCAVATORS

NEW TYPE VIBRATOR SHAFT—This new shaft has the reinforcing spring of the flexible shaft completely locked in by being solidly imbedded in a heavy layer of oil-resistant molded rubber. This provides a strongly reinforced shaft perfectly smooth on the outside and makes for long shaft life. Another feature is a non-metallic inner liner impregnated with graphite, assuring practically no loss of power through friction.—**Wyzenbeek & Staff, Inc., 838 West Hubbard, Chicago 22, Ill.**

IMPROVED PAYLOADER—Gradual or abrupt dumping can be accomplished with the addition of hydraulic bucket control to the 10½-cu.ft. and 1¼-cu.yd. Payloaders. Advantages are elimination of grounding and dragging the bucket to close it and ability to deposit portions of the load in two or more places.—**Frank G. Hough Co., 801-G Sunnyside Ave., Libertyville, Ill.**

MOBILE ONE-MAN CRANE CARRIAGE—Three axle, close-coupled, rubber-tired rig for use with any crane or shovel of 5 to 30 tons lifting capacity or with ⅜- to 1½-cu.yd. shovel is claimed by its manufacturer to provide increased stability of from 25 to 40 per cent over any other crawler type machine on a 360-deg. swing. Other advantages: Removable rear section of frame to provide close digging operations; travel speeds available up to 15 mph. under own power with same speeds in either direction; short turning radius; all controls operated from operator's position in cab; special drawbar arrangement for towing crane with tractor truck, eliminating need for trailer when moving longer distances at higher speeds.—**Six Wheels Inc., 1550-84 E. 20th St., Los Angeles 11, Calif.**

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IS THE NAME TO *Remember* WHEN YOU WANT

EXTRA VALUE

IN BODIES AND HOISTS

Photo shows a PERFECTION No. 354 Dump Body (11 yd. capacity) 216" x 84", mounted on trailer. Equipped with

PERFECTION

ISO-DRAULIC

ROLL-A-LIFT

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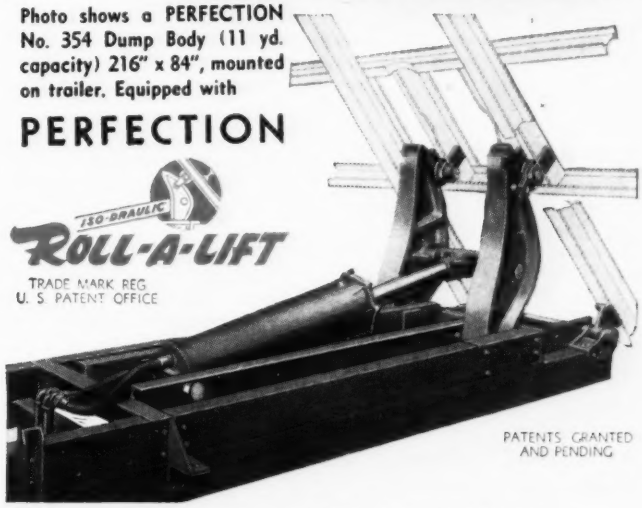

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Galion, Ohio, U. S. A.

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FOR ANY TRUCK STANDARD or SPECIAL UNITS IN ALL SIZES : FOR ANY USE

Now...tractors pull standing still!

with the **AMERICAN** *single drum*

Tractowinch

The AMERICAN Tractowinch adds an extra "dimension" to tractor usefulness. With 7500 lb. single line pull, (on tractors with sufficient p.t.o. rating) it has plenty of power for towing railroad cars, dragging heavy loads, hoisting, loading and pulling, even in very close quarters. Developed after long study of the special problems involved, it is now a production item—fully perfected, field tested for use on industrial wheel type tractors.

Every feature of deluxe winch construction has been included. The Tractowinch is ball bearing equipped . . . has jaw clutch on drum, to permit free spooling . . . has powerful hand brake . . . fairlead rollers allowing sharp off-lead of cable to either side . . . and has drawbar built into frame for regular towing jobs. Available through your tractor distributor. Or write us direct for prices and literature.

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Please send Catalog 125-H-2, with details on the AMERICAN TRACTOWINCH.

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Company_____

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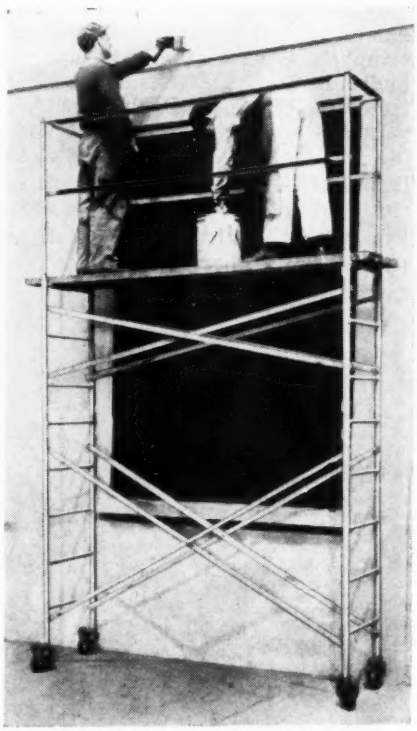
STRUCTURAL GLASS — A new shade of structural glass known as alamo tan has gone into production to replace ivory vitrolite which no longer can be made because of the ban on the use of uranium. It is a warm, rich, light color that like ivory will be particularly suitable for bathrooms and kitchens in the home and for walls of toilet rooms in public buildings and for store facades. With its addition, the manufacturer now is making nine colors of structural glass, including white, black, peach, light gray, red, cadet blue and mahogany. Several others may be added.—**Libbey-Owens-Ford Glass Co., Toledo, Ohio.**



MOVABLE SCAFFOLD — Sectional steel ladder scaffold is only 24 in. wide, designed for use in constricted working areas. Fitted with casters for easy movement as job progresses. Made in four heights of 3, 5, 6½ and 10 ft. Applicable for painting, plastering, and general maintenance operations.—**Patent Scaffolding Co., Inc., 38-21 Twelfth St., L. I. City, N. Y.**

WELDING AND CUTTING TORCH —With a flexible head that can be revolved through a 180-deg. arc, the Cristorch reaches previously inaccessible spots. The torch will cut metal of 1/32- to 4-in. thickness and holes and circles from ⅜- to 30-in. dia. with 1/64-in. accuracy. It cuts countersunk holes and bevels one or both sides of a straight cut in a single operation. A side-opening tip lock-nut decreases time required to change tips.—**Hamilton Tool Co., 9th St. at Hanover, Hamilton, Ohio.**

THE *Harder* THE HAUL
THE *Better* THEY LIKE IT

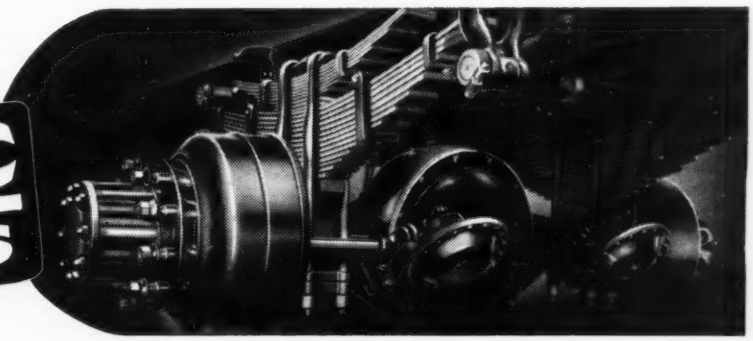
Pulling heavy loads over the passes of the Continental Divide, where elevations often exceed 11,000 feet, is all in a day's work for heavy duty GMCs like the giant Diesel pictured above.

GMC heavy duties have big, dependable valve-in-head gasoline engines in four sizes . . . powerful pulling GM Diesels in 4-cylinder and 6-cylinder types. They have thick-beamed, heavy-geared axles. And they have frames, clutches, transmissions and brakes that combine with these engines and axles to provide trucks for every type of transport job . . . over-the-road or off-the-highway . . . in weight ratings up to 90,000 pounds.

From every heavy hauling angle . . . economy, dependability and long life . . . your best truck buy is a big, heavy duty GMC.

GMC TRUCK & COACH DIVISION • GENERAL MOTORS CORPORATION

GMC heavy duty trucks are all-truck designed and all-truck engineered in every part and feature. This rear axle, spring and brake assembly, used on a 750 series Diesel, is typical of the all-over rugged construction that enables GMCs to haul big pay-loads for long periods at low cost.



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GASOLINE • DIESEL

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Faster and at Lower Cost...

HAVE YOUR GENERAL TIRE DEALER SPECIFY, INSTALL AND SERVICE THE TIRES FOR THE JOB!

The General Earth-Mover for free-rolling wheels is designed to ride higher, roll more easily and use less energy from the power wheels. The self-cleaning tread is made up of thick, bold-faced blocks which spread the load weight evenly and protect the carcass against cutting and bruising. Easy-flexing tire body absorbs obstructions that would injure a hard tire. Those who use it know... this tire moves more yards of dirt faster, and at lower cost.

The GENERAL TIRE

General Non-Directional Cleated Tire is unsurpassed for extra drive wheel traction in soft ground, sand or gravel. Equal traction is developed forward or backward, making this tire well suited for cranes, shovels or dump trucks. A wide center rib provides an easy steering, smooth ride on the highway, and assists in the long wear qualities built into the tire... from reinforced bead to extra thick tread. Shock absorber construction absorbs bumps that would become bruises.

The General L. C. M. has proved itself as the outstanding truck tire for hard, heavy hauling where extreme tire strength and exceptional traction requirements are the deciding factors. With the "V" of the power cleats pointing forward, drive wheels are ready to go through almost any kind of mud, slush or poor road condition; yet there is no sway and little noise on the highway. With the "V" of the power cleats pointing backward, The L. C. M. is suitable for power wheels that spend part of their time on paved roads, for drawn wheels... for long, even wear and enormous load capacity.

THE GENERAL TIRE & RUBBER COMPANY
AKRON, OHIO

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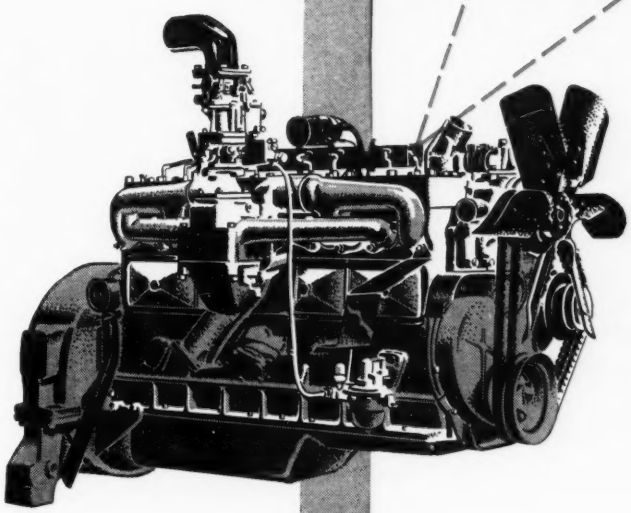
in harvesting the world over



● This year's harvest is the largest and richest that the world has ever known. Chrysler Corporation is proud to have played a part in making it possible. Chrysler Industrial Engines and Power Units serve agriculture in tractors, combines, power generators, irrigation pumps and farm machinery of all descriptions. Each compact engine is a result of Chrysler engineering and production skill . . . designed to bring you dependable, economical power For A Better Day's Work.

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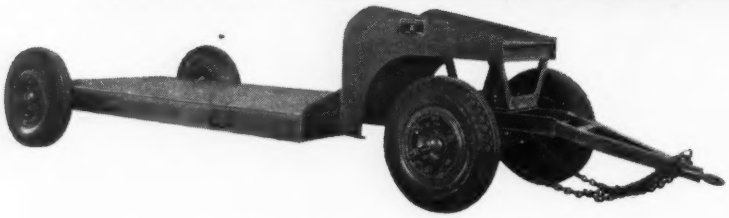
Underslung Trailers for Transporting Construction Equipment.



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If your problem is one of materials movement, call in Mercer. Let our broad engineering skills and large-scale manufacturing facilities save you money! We can solve these handling operations to yours, your plant's and your treasury's satisfaction!

Load it with stationary or mobile machinery. Hook-up to tractor or jeep — and on to the new work area! Time Saver! Labor Saver! Desirable low clearance safety plate deck. Tail platform slopes for skid boards. Equipped with safety tow chains. Type available in all sizes and with pneumatic or solid rubber tires. Send for special Mercer Trailer Truck bulletin.

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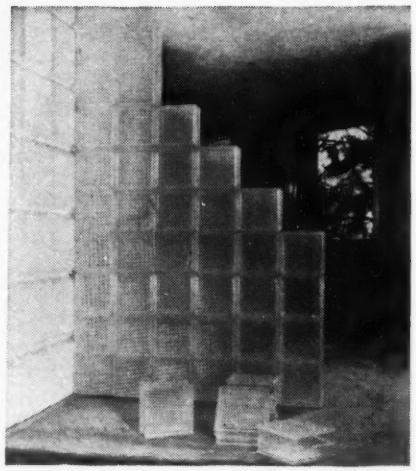
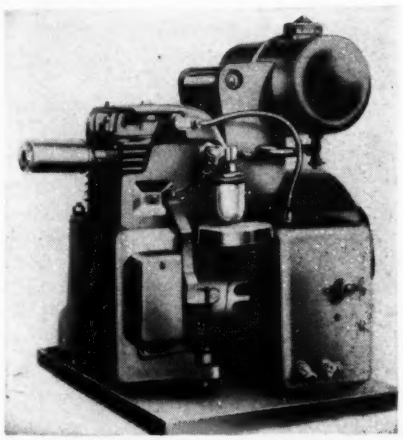


INTERIOR PARTITION BLOCK—Soon to be ready is an interlocking plastic partition block for interior non-load bearing use. Made of Styron, the blocks are about 7¾ in. square and 4 in. deep. Weighing about one-fifth as much as glass blocks, they have a smooth outer surface, while the inner surfaces are composed of hundreds of diamond-like facets which produce a beautiful effect as the light passes through them. An interlocking rib allows quick installation.—**Columbia Protektosite Co., Inc., Carlstadt, N. J.**

DOOR CLOSERS — New line of lightweight aluminum surface door closers makes for speedy and economical installation and reduces freight and handling costs. Closers are of the rack-and-pinion hydraulic type and contain all steel interior parts. There is a special checking fluid— a non-gumming, non-freezing liquid which lubricates all the parts. —**Norton Door Closer Co., 2900-2918 N. Western Ave., Chicago, Ill.**



SMALL ELECTRIC LIGHT PLANT —Generates 350 watts ac., weighs only 77 lb. and is small enough (less than 2 cu.ft.) to fit into trunk compartment of automobile. Powered by 4-cycle air-cooled Onan engine.—**D. W. Onan & Sons, Inc., Minneapolis 5, Minn.**

Better bird – better buy ...*

* Whether it's turkeys or cement, scientific control in production means a better product, more and better satisfied customers.

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PORTLAND – HIGH EARLY STRENGTH – AIR ENTRAINING – MASONRY

ELECTRODE FOR MACHINABLE WELDS—Nickelcast is a 100 percent nickel electrode for producing machinable welds on cast iron without preheating the metal. The welds are machinable both in the deposit and line of fusion and may be drilled, tapped, or machined at any point in the weld zone. The electrode is free from fluorides and will not produce injurious gases. Coating is insulated to prevent arcing through when working in confined quarters. Can be used with either ac. or dc. welding current. Available in 3/32, ⅛, 5/32 and 3/16-in. diameters.—**Hobart Bros. Co., Troy, Ohio.**

SOLID PARTITION SYSTEM—Space-saving, fire-resistant 2-in. solid partitions are erected quickly and economically with a new solid partition system. Partition members are so designed that they can be used in several different combinations to meet varying building requirements. Z-type ceiling runner can be used with the Z-type floor runner or with metal base clips and metal base. Where partitions are to be erected along beams, an L-type beam runner, which can be attached to the side of the beam, is substituted for the ceiling runner, and ¾-in. cold rolled steel channels are used as studs. They fit into rectangular slots in the runners and are held there without need of further support. Metal base clips used with this system hold the channel studs and also support and secure the metal base in place.—**Inland Steel Products Co., P. O. Box 393, Milwaukee 1, Wis.**

MOBILE RADIO EQUIPMENT—Instantaneous voice communication between supervisory personnel and service vehicles can be obtained by the use of FM mobile radio equipment. A single dust-proof, shock-mounted metal case 9⅝ in. wide, 11⅞ in. high and 13½ in. long, houses both the transmitter and receiver. A selective system can be installed which permits the central office to contact one or more mobile units without disturbing any of the others.—**Federal Telephone and Radio Corp., 100 Kingsland Road, Clifton, N. J.**

Longer Life Lower Costs

WHEN YOU USE

Outstanding quality is never a matter of chance, consequently there are definite reasons for the consistent top-flight performance of Preformed "HERCULES" (Red-Strand) Wire Rope. Material . . . design . . . experience . . . fabrication . . . preforming —all are contributing factors that add up to its plus value, which mean longer life and lower operating costs.

Verifiable FACTS *About* PRE-FORMED PERFORMANCE

1. As broken wires lie practically flat, they are not so apt to injure hands of the men handling it. Also, there is less possibility of an "out of place" wire causing damage to adjacent wires in the rope.
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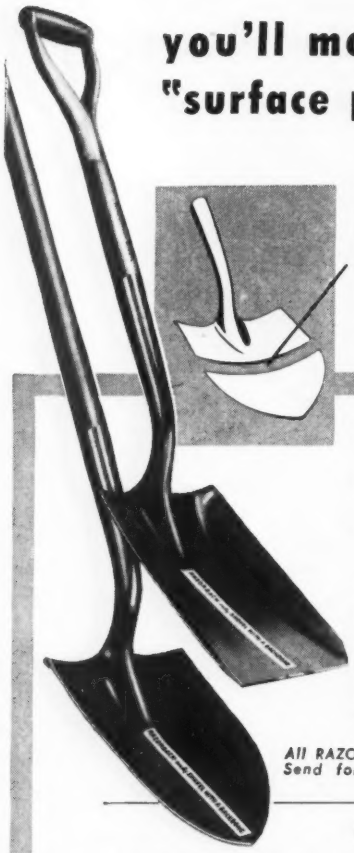
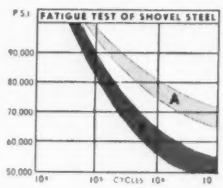
you'll move more loads with "surface peened" RAZOR-BACKS



strongest light shovels made, because they have a full-length backbone: The center section, where shovels get all their wear and strain, is 13 gauge thickness all the way from cutting edge to upper part of socket. The sides, where shovels never wear out, taper to 17 gauge. No other shovel has this correct construction.

2½ to 5 times tougher steel, because it's "surface peened": Modern cold-working process, following heat treatment, enables RAZOR-BACK steel to resist the constant bending that makes ordinary shovels break at the frog.

Standard A. S. T. M. tests of fine heat treated shovel steel show that "surface peening" increases resistance to bending fatigue 2½ times at 90,000 psi, 5 times at 80,000 psi.



All RAZOR-BACKS are deep hung and perfectly balanced. Send for Catalog, prices and distributor's name.

THE UNION FORK & HOE COMPANY
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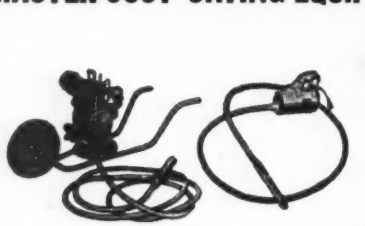
STONE, BALLAST, INDUSTRIAL FORKS — ASPHALT AND ROAD RAKES

MASTER COST-SAVING EQUIPMENT—FOR IMMEDIATE DELIVERY



Gas or Electric Concrete Vibrators (Catalog No. 689)

Hand Tools for operating from all Master Vibrators and BIG-3 (Catalog No. 683)

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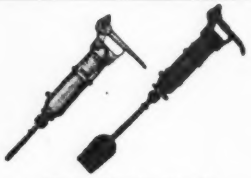

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Gas or Electric Back-Fill Tampers (Catalog No. 699)

Vibratory Concrete Finishing Screed. Sizes 6' to 36' (Catalog No. 596)

"Turn-A-Trowel" for trowelling concrete Sizes 48" or 34" (Catalog No. 685)

Send for illustrated catalog on any item to
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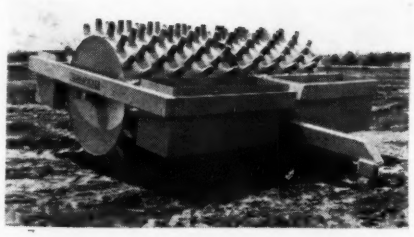
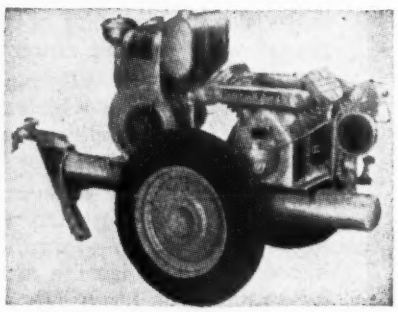


SHEEPSFOOT ROLLER — Designed to meet requirements of Corps of Engineers, Bureau of Reclamation and the several state highway departments is the new LeTourneau Model 144 Tournapacker. Wide range of compaction pressures, from 218 to 670 psi., is possible by filling drums with water and loading attached boxes with sand. Self-cleaning teeth, tempered glass hard, taper off to a circular tamping foot of 8 sq. in. from a square base. This two-drum unit of box-beam construction rolls on heavy-duty dust- and waterproof bearings.—**R. G. LeTourneau, Inc., Peoria, Ill.**

ARC - WELDING ELECTRODE — New low-hydrogen type coated electrode designed to prevent under-bead cracking in weld deposits is called Airco No. 394. Operates on either ac. or dc. current and is designed to give welds of 100,000 psi. Recommended for fabrication of hardenable steels susceptible to under-bead cracking when conventional types of electrodes are used without preheat.—**Air Reduction Sales Co., 60 E. 42nd St., New York 17, N. Y.**



COMPACT COMPRESSOR — Pac-Air is a self-contained, completely air-cooled, gasoline - engine - driven portable compressor unit for small building contractors, or as a utility compressor for large contractors. The 2-cylinder, single-stage compressor has a piston displacement of 37.5 cfm. at 80 psi. pressure. Some uses are drilling anchor bolt holes, chipping, roughing concrete for patching, tearing out brick and masonry, installing machinery, and breaking up small boulders.—**Ingersoll-Rand, 11 Broadway, New York 4, N. Y.**

Here's the way to cut costs on jobs like this!

YOU remember only too well how a job like this used to be handled. It meant a small mixer, small capacity, perhaps shooting towers or lots of concrete buggy work, perhaps a crane and lots of false construction.

Look at this job. A MultiFoote 34-E with the elevated boom. The elevated boom puts the concrete up over 23 ft. with the bucket doors clear. The MultiFoote travels along the forms to reach any spot on the job — no extra equipment, labor cut to the minimum, no unnecessary false work or ramp construction.

Your MultiFoote and the MultiFoote Elevated Boom means new versatility both on highway work and general concrete construction. Let us give you complete details. Two sizes: 34-E Single Drum and 34-E Duomix (double drum). Remember there are more MultiFoote Pavers in service than any other make.

Ask about the Adnun Black Top Paver, the only paver of its kind that will lay black top, stone and cinders.

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Subsidiary of Blaw-Knox Co.

FOOTE

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ADNUN BLACK TOP PAVERS
Kinetic ASPHALT MIXERS

Here's a new Thor breaker so good it will "sell in pairs!"

It's the Thor "24"—a completely new 70-*pound* breaker that answers a big demand for a demolition tool just under the heavy duty class.

More than this, *two* of the new Thor "24's" will operate at full efficiency off one 105 cubic foot compressor . . . *another popular demand!*

The Thor 84-pound "25" leads the heavy duty field . . . the Thor 59-pound "23" outpowers the light duty class. NOW Thor places a great new leader in the 70-pound class.

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HOUGH model HM PAYLOADER

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4 Wheel Drive Tractor Shovel

FEATURING . . .

- 1½ Cu. Yd. Capacity
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- Hydraulic Down-Pressure
- Rear-wheel Power Steering
- Automatic Tip-back Bucket
- Four Forward . . .
- Four Reverse Speeds

Here's a big 1½ cu. yd. Tractor Shovel with tremendous traction and flotation that can travel on or off the road at speeds up to 16 miles per hour . . . that can work on pavements, sand, gravel, mud or snow . . . that can dig tough materials and load big trucks quickly or carry its loads to disposal points . . . can level, spread and bulldoze . . . move fast from one job to the next. The HM Payloader is the most versatile, most usable Tractor Shovel ever built. It is low, compact and sharp-turning . . . works fast in close quarters . . . has four speeds in either direction and quick-acting forward-reverse control. Big 76 HP heavy duty engine is rear-mounted for maximum balance, stability and capacity. Power-boosted steer makes operation easy all day. Double-acting fingertip hydraulic control raises-and-lowers, dumps-and-closes the bucket by positive power . . . gives down pressure when needed. Automatic quick tip-back of bucket gets and retains full bucket loads . . . allows them to be carried without spillage.

WRITE FOR FREE CATALOG

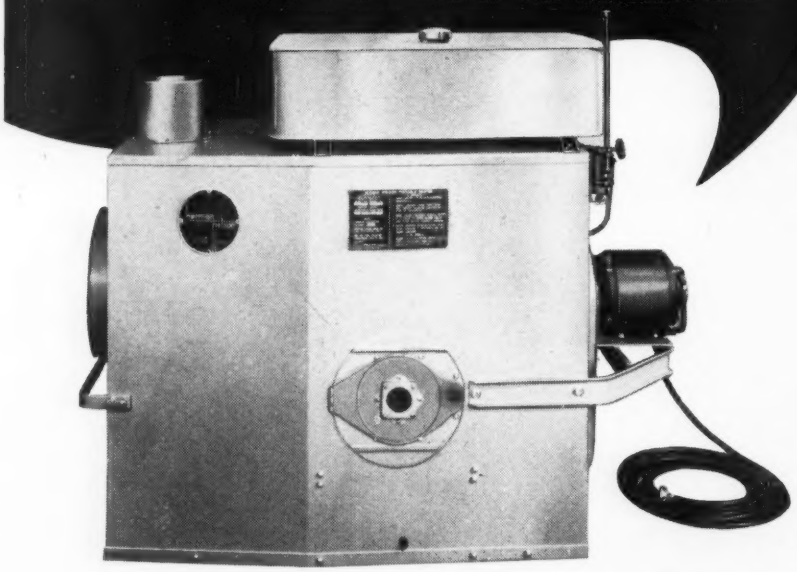
on the Model HM or on other sizes of Hough Payloaders —the 1¼ cu. yd. Model HL, the ¾ cu. yd. Model HF, the 10½ cu. ft. Model HA.

THE FRANK G. HOUGH CO.

SINCE 1920

706 Sunnyside Ave. Libertyville, Ill.

New LOW COST PORTABLE HEAT FOR YOUR SMALLER JOBS



THE NEW HERMAN NELSON
Economy Model Portable Heater

- **Provides Quick, Clean, Safe Heat—*without* smoke, soot, fumes or open flame!**
- **Abundant *fresh*, heated air — *forced* to areas where most needed!**

Burns range oil, kerosene or prime white distillate—costs but 19c per hour!

125,000 BTU per hour capacity—enough to heat almost two ordinary 5-room houses!

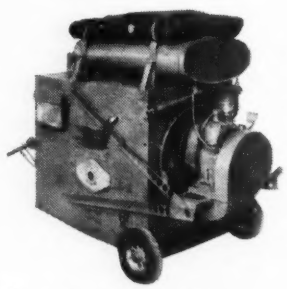
Electric motor powered; 115-230 volt, 60 cycle, single phase.

One 12" dia. x 12' long, extendable hot air duct.

Small, compact, light weight.

LOW PRICED FOR THE SMALLER JOBS!

Still Available



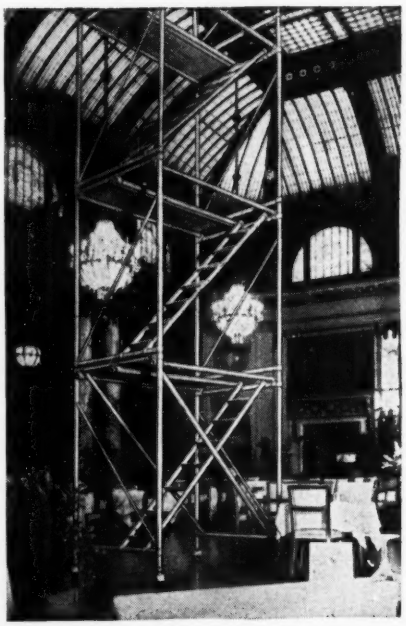
The original Herman Nelson, gasoline burning, gasoline engine powered, Portable Heaters. For areas lacking electric power. Completely self-powered. Easily portable by one man.

Write for Interesting Free Booklet on "Cost Control"

THE HERMAN NELSON CORPORATION MOLINE ILLINOIS

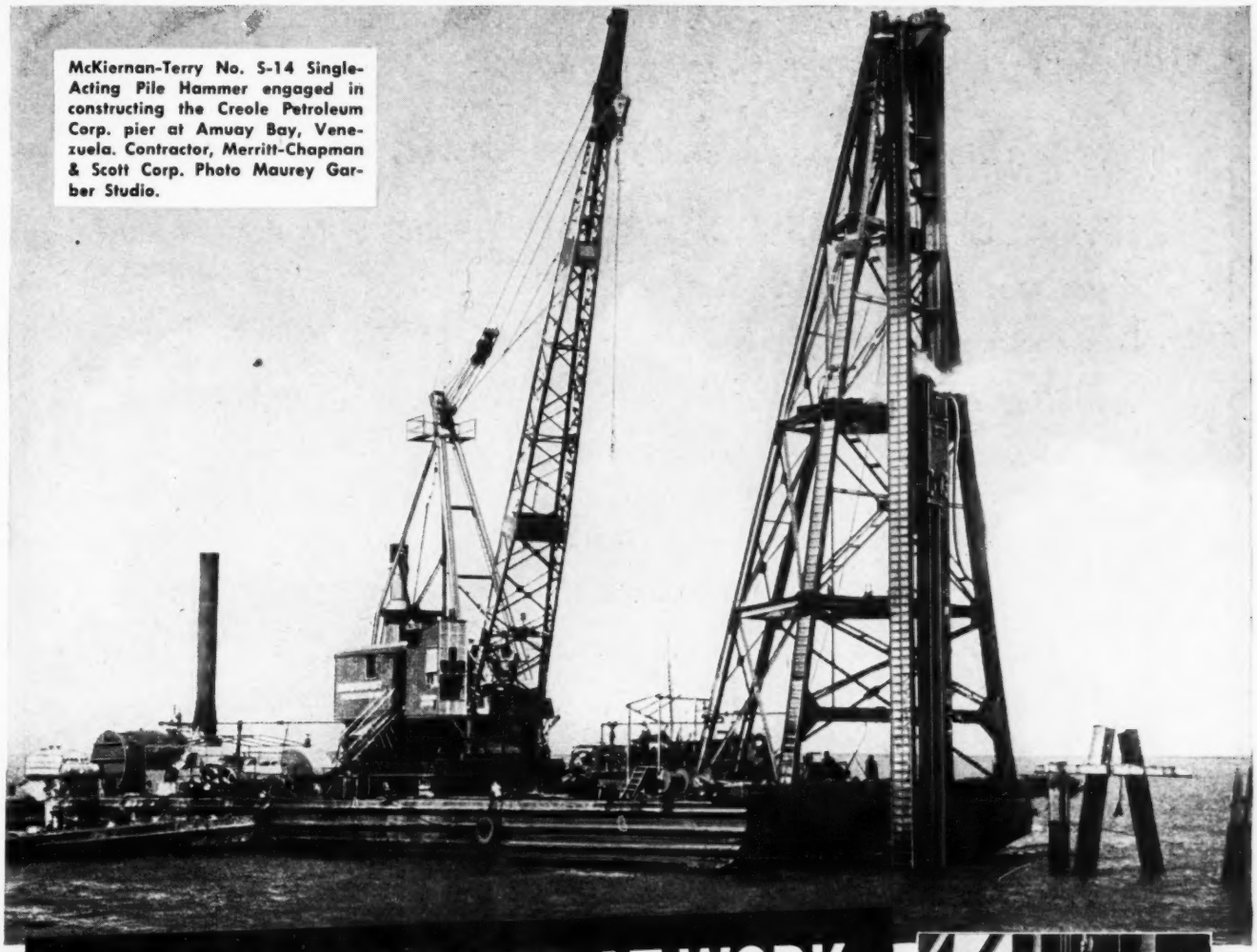
SINCE 1906 MANUFACTURERS OF QUALITY HEATING AND VENTILATING PRODUCTS

FLOOD LAMP—Designed for heavy-duty use on mobile equipment, Sturdilite provides high intensity and spread with a sealed-beam unit. Features are an 18-gage steel case, spring-mounted socket with compression springs and vibration-absorbing mounting base, floating in rubber. Models are available in 4-6, 12-16, and 110-120.—**Phoenix Products Co., Metal Spinning Division, 4715 N. 27th St., Milwaukee 9, Wis.**



LIGHTWEIGHT SCAFFOLD—Made of lightweight aluminum alloy, Up-Right scaffolds are available in any number of section units. Lock-in feature eliminates all wing nuts, bolts, loose parts and requires no wrenches. Each section folds flat. A 4½x6-ft. foundation area is standard with optional outboard supports available to provide a 10x10-ft. foundation area. A safety-tread stairway permits user to mount the scaffold entirely within the structure.—**Up-Right Scaffolds, 1013 Pardee St., Berkeley, Calif.**

INSULATED WIRE—Laytex RUW, a new electrical wire with rubber insulation that improves when soaked in water, has been developed. It is designed for use underground and in wet locations where high moisture resistance gives it longer life and increased safety. It is particularly suitable for underground lead-ins and for wiring damp basements. The secret of the wire's durability is a coating of high purity natural rubber latex applied by the dip process. In addition to greater moisture resistance, the insulation of the new wire has improved tensile strength and elongation.—**United States Rubber Co., Rockefeller Center, New York, N. Y.**



McKiernan-Terry No. S-14 Single-Acting Pile Hammer engaged in constructing the Creole Petroleum Corp. pier at Amuay Bay, Venezuela. Contractor, Merritt-Chapman & Scott Corp. Photo Maurey Garber Studio.

FAMOUS HAMMER AT WORK
IN SOUTH AMERICA

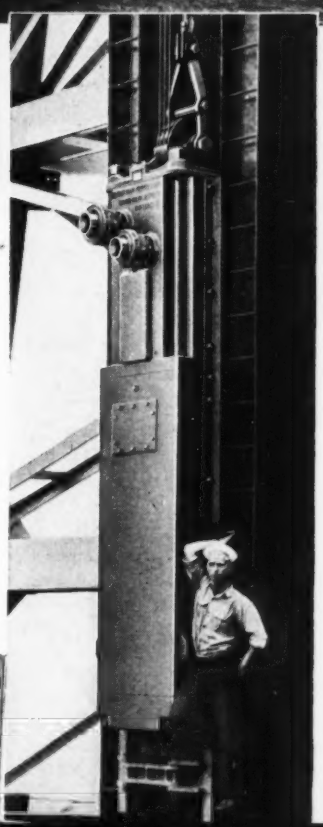
This huge single-acting hammer, operated from the world's largest floating pile driver, is one of the famous pair first used in constructing the 10,050-foot bridge over the Potomac River at Ludlow Ferry, Md.

One of the pair was later employed to drive test piles for the Morganza Spillway in the lower Mississippi. At Amuay, Venezuela, the big hammer is shown at work on still another difficult project.

Widely chosen by engineers and contractors for power, dependability, safe operation and endurance, McKiernan-Terry Pile Hammers lead busy lives. Now available in a complete, standardized line —10 double-acting sizes, 5 single-acting sizes and two sizes of double-acting extractors.

DESCRIPTIVE LITERATURE

Write for information and specifications on McKiernan-Terry Double-Acting and Single-Acting Pile Hammers to have handy in your files.



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Manufacturing Engineers
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McKiernan-Terry PILE HAMMERS AND EXTRACTORS

NORTH • EAST • SOUTH • WEST • IT'S SCHRAMM!

so versatile, so easy to operate, so economical . . .

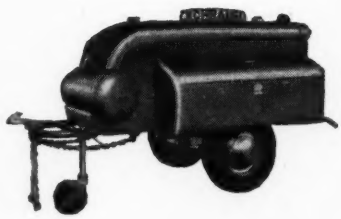
IT PAYS TO USE SCHRAMM!

VERSATILE . . . because Schramm can furnish air for any compressed air job in your work; and versatile because there is a size and model Schramm to fit your individual needs!

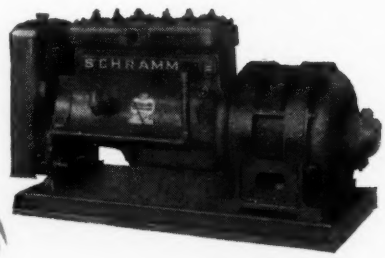
EASY TO OPERATE . . . merely by pushing a button to start, and compact and lightweight enabling you to move the portable units wherever you like! Meanwhile, the stationary units take up very little room, are vibrationless and no trouble!

ECONOMICAL . . . because Schramm can do *all* your compressed air jobs quickly and efficiently. Features that assure economy include 100% water cooled, forced feed lubrication, and mechanical intake valve.

Your field has found that Schramm Air Compressors well fit its needs. And has specified Schramm everywhere . . . North, East, South and West. Write today for full data.



PORTABLE



STATIONARY

SCHRAMM INC.

THE COMPRESSOR PEOPLE
WEST CHESTER
PENNSYLVANIA

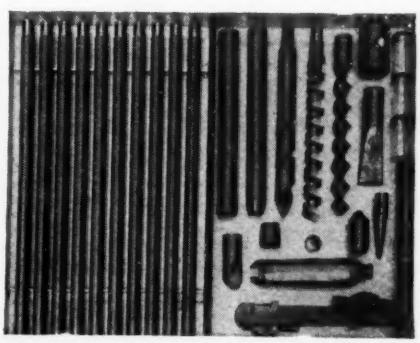
TOOLS *for the* JOB

Schramm Inc. also has a complete line of Pneumatic Tools to offer and recommend for operation by their Compressors.

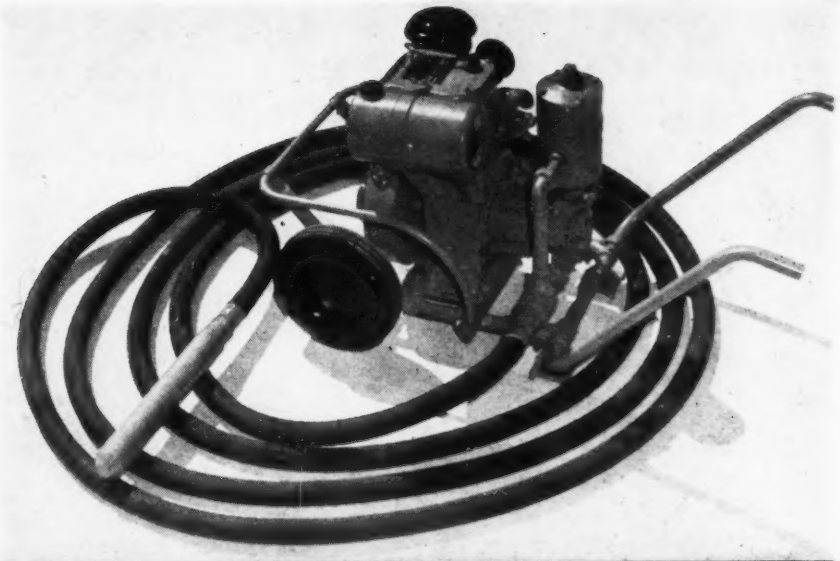
These include Rock Drills, Paving Breakers, Trench Diggers, Clay Spades, Backfill Tampers, Tie Tampers, Sheeting Drivers, Demolition Tools, Chain and Circular Saws.

Write for bulletins and prices.

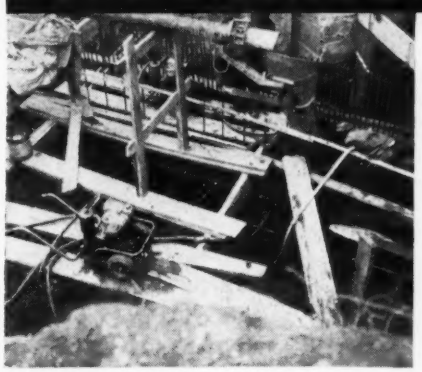
REPLACEABLE - BIT ROOTER—"Quick-Change" rooter bit for use on digging buckets of ditchers consists of two members, a holder which is bolted to the bucket and a removable bit or cutting edge which can readily be replaced when worn. New bits are hammered into the holder where a wedge-shaped socket or cavity receives corresponding shank in the bit. Shank has V-spline which holds once it is driven into the socket and stays put. No bolts, keys or special tools are required. To remove worn bit, a drift pin is placed in a slot in the bit holder and when a sharp blow on the pin is applied with a hammer, the bit pops out.—**Gar Wood Industries, Inc., Findlay Div., Findlay, Ohio.**



SOIL-SAMPLING KIT—Made up of 12 different earth augers, soil sampling tubes, chopping and jetting bits and subsurface probing tools. In handy steel box are ten drill rod sections 2 ft. 6 in. long, each made of cold drawn seamless steel tubing and having square threads and flush joints. To withstand hard driving by sledge or heavy mall, the steel tubing drill rods have a heavy shoulder. Cutting shoes are of hardened heat-treated steel. Complete kit may be conveniently placed in any automobile.—**Acker Drill Co., Inc., Scranton 3, Pa.**

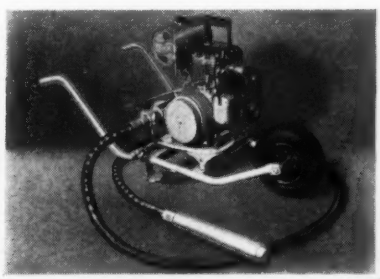


THE JACKSON HYDRAULIC



Saves a "WHOPPING" amount of time and effort!

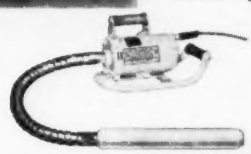
When you place this concrete vibrator, ***with its 50 ft. reach,*** on the job, every bit of concrete poured within a 100 ft. circle can be thoroughly vibrated without changing the location of the machine; the hard-to-get-to places become quickly accessible, non-productive time is drastically cut and the job proceeds faster and more profitably. Tough, trouble-free and highly efficient. Write for complete details.



OTHER JACKSON VIBRATORS TO SOLVE EVERY VIBRATING PROBLEM — PERFECTLY!

Internal and external types — for thin sections to mass construction — highway, airport and municipal paving — product manufacture. See them at your Jackson distributor or write for literature and our recommendation for any particular type of job.

Model FS-6A. Flexible shaft, Gas-engine drive. Available with 3 heads for thick or thin sections. Flexible shafting in 7' to 14' lengths up to 28', grinding and other attachments.

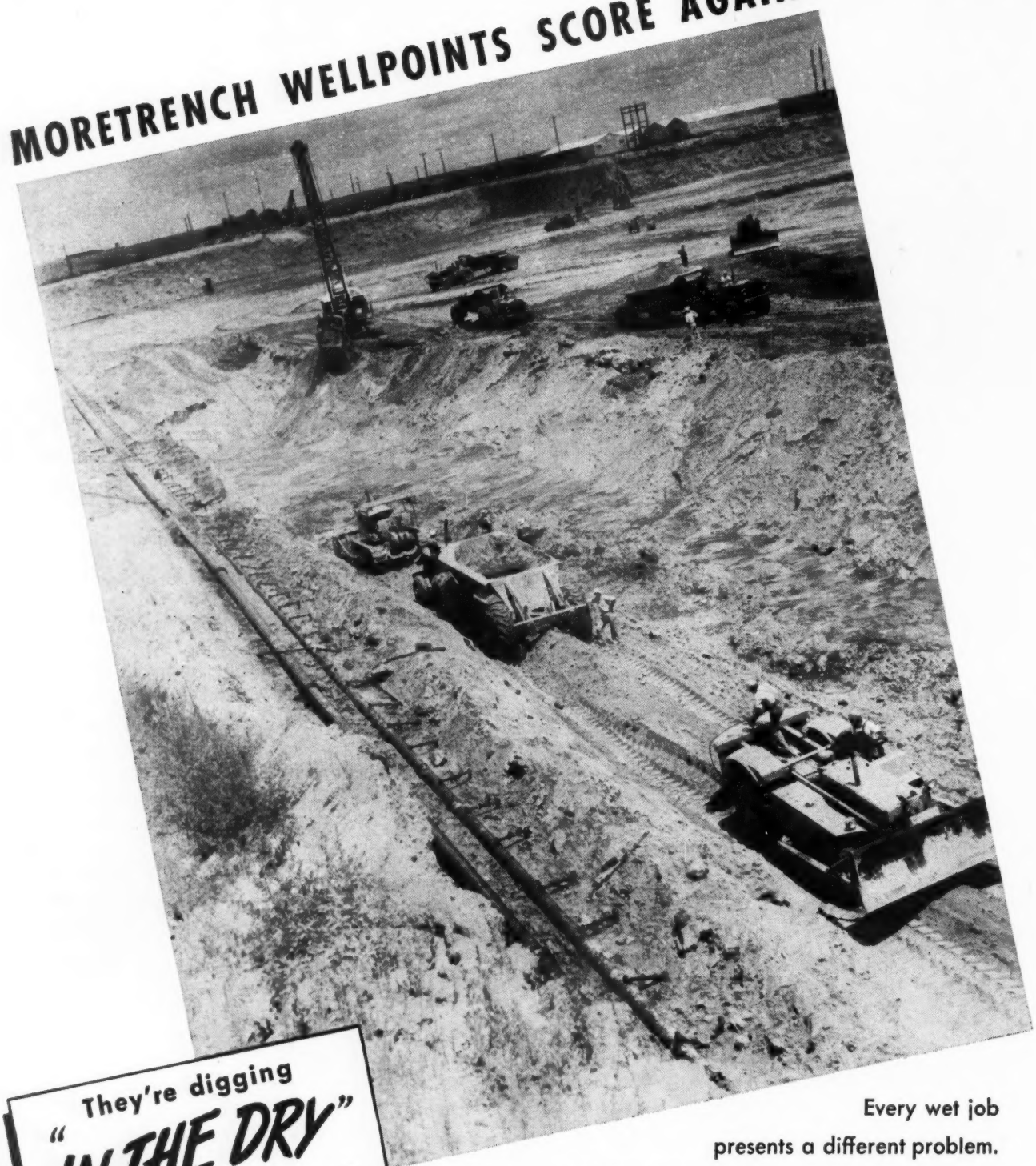


Model FS-7A. Flexible shaft, Electric. Ideal for decks, thin walls and with short shafts for spud work.

MUNICIPAL PAVING UNIT. Manually guided paving machine and portable power plant. Easily places upward of 65 cu. yds. of stiff mix concrete per hour. Undercuts at side forms. Strikes off to crowns, regular and inverted; works around manholes, etc.

ELECTRIC TAMPER & EQUIPMENT CO., Ludington, Michigan

MORETRENCH WELLPOINTS SCORE AGAIN!



They're digging
"IN THE DRY"
at Harlan County Dam,
Nebraska . . .

Every wet job presents a different problem.

On this project, Moretrench Wellpoints had to be jetted 3½ feet into soft shale to effectively dewater the excavation area to rock.

Whatever your pumping problem, simple or complex, Moretrench equipment—*and experience*—can solve it!

MORETRENCH CORPORATION

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Carbide
FLOODLIGHTS

FOR ALL PURPOSES FOR WHICH FLOOD-LIGHTS ARE REQUIRED

Simple in construction
Economical in Cost
Dependable in Operation
Available in 1500, 8,000 and 16,000 candlepower units.

National Carbide N-200 Light illustrated. Write for literature showing entire line of Floodlights and Lanterns.

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60 East 42nd St.
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When Heavy Loads are moved . . .
ROGERS TRAILERS are proved . . .

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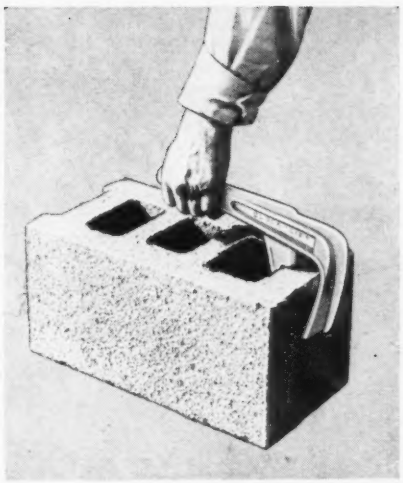
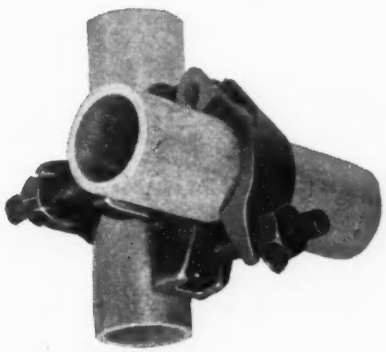
ROGERS BROTHERS CORPORATION
220 Orchard Stree
ALBION, PA
EXPERIENCE builds 'em
PERFORMANCE sells 'em

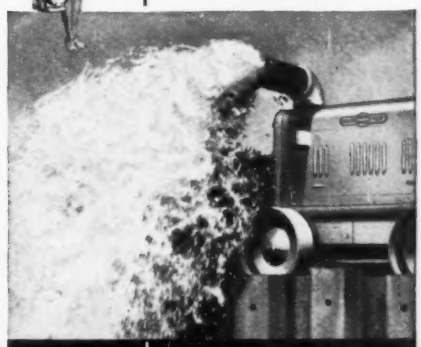


BLOCK-LIFT—Invented by master mason, block-lift reduces work in handling building blocks. It is of cast aluminum weighing only 32 oz. Acting as a handle, its open jaw grips either end web firmly to lift, place or true-up the block. Excellent leverage makes handling heavy blocks an easy one-hand operation that saves hands, gloves and back.—**Block-Lift Co., Mount Vernon, Ohio.**



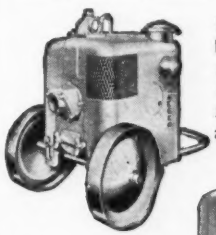
TUBULAR SCAFFOLD CLAMPS—Sturdie Drop-Forged Clamps and Sturdie Connectors, to fit standard 1½-in. (about 2 in. O.D.), facilitate the use by any contractor, of 2-in. tubular steel scaffold. Because the pipe-ends are not involved in most connections of horizontals, verticals, and diagonals, stock pipe need not be cut to exact length. In most cases diagonals may be clamped at right angles to the horizontals in adjacent frames, thus reducing the number of swivel connectors needed. Male and female connectors for butting verticals are needed only when the scaffold height exceeds the pipe length available.—**Leonard Malone Co., 342 Madison Ave., New York 17, N. Y.**

Here's how to handle water—



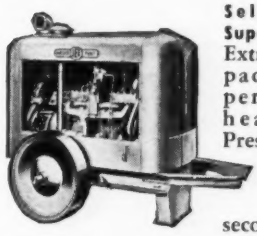
JAEGER
enclosed-type pumps give you steady high efficiency — longer life

To a better engineered, more amply powered, conservatively rated line of pumps, Jaeger has added all-weather protection of all heavy duty models of 2" to 10" size — for sustained efficiency of pump and engine, extra hours of smooth, dependable performance, plus easy accessibility at all times.



2" and 3" Heavy Duty: Most rugged small pumps built. Conservatively rated @ 10,000 and 20,000 g.p.h.

4" to 10" Portables: Compact, extra powerful units of 40,000 to 240,000 g.p.h. rating and exceptional air capacity.



Self-Priming Super-Jet Pump: Extremely compact, yet outperforms old, heavy types. Pressures to 250 lbs.; 90 h.p. engine. Only 30 seconds to prime @ 20 ft.

Only Jaeger Offers All These
Inherent priming action plus "jet" priming — doubly sure and fast . . . long-life "Lubri-Seal," accessible for inspection . . . self-cleaning shell design . . . replaceable liners or seal rings . . . Every pump tested and certified for performance.

Sold, Serviced in 128 Cities

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TORTURED ON THE RACK FOR LONGER SERVICE LIFE

QUAKER PRE-TESTED PRODUCTS FOR THE CONSTRUCTION INDUSTRY ASSURE LONG TROUBLE-FREE SERVICE

Test the finished products until they break down! That's the aim of the technical men in Quaker's modern laboratories. The results of these torture-tests are the reasons why Quaker Hose, Belting, Packings, moulded goods and other industrial products stand up so much longer in use. They're pre-tested and performance-proved!

The adhesion test shown is just one of the 18 torture-tests. Here weights are attached to the rubber section of the product for the purpose of stripping off the fabric. Tight adhesion of rubber-to-fabric is an important factor in the long-lasting quality of belting, hose and packings. Checking the adhesive qualities of rubber in Quaker products assures strong resistance to ply separation . . . prevention of product breakdown in service.

For higher plant efficiency and lower operating costs specify long-lasting, pre-tested Quaker Products. Call your nearest Quaker distributor. He and the Quaker sales engineer are teamed to provide accurate recommendations on industrial rubber products.

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QUAKER *Pre-Testing* OFFERS THE CONSTRUCTION INDUSTRY

BELTING FOR MAXIMUM HORSEPOWER TRANSMISSION

Huge flat belts driving rock crushers or fractional horsepower belts for small motors . . . Quaker has the one to fit the drive for peak performance. Quaker conveyor belts have won an enviable reputation for their wearability and operating efficiency.

HOSE THAT STANDS WEAR AND ABRASION

Whether it is air hose transmitting high pressures and being constantly rubbed over jagged rock . . . or water hose in and around the plant . . . Quaker pre-tested products stand up and assure service under all conditions.

PACKINGS FOR TIGHTER SEALS . . . LONGER WEAR

Packings for a water pump or the many other places where packings play an important part around rock and gravel plants . . . Quaker products have been pre-tested . . . you can install them with assurance of positive performance.

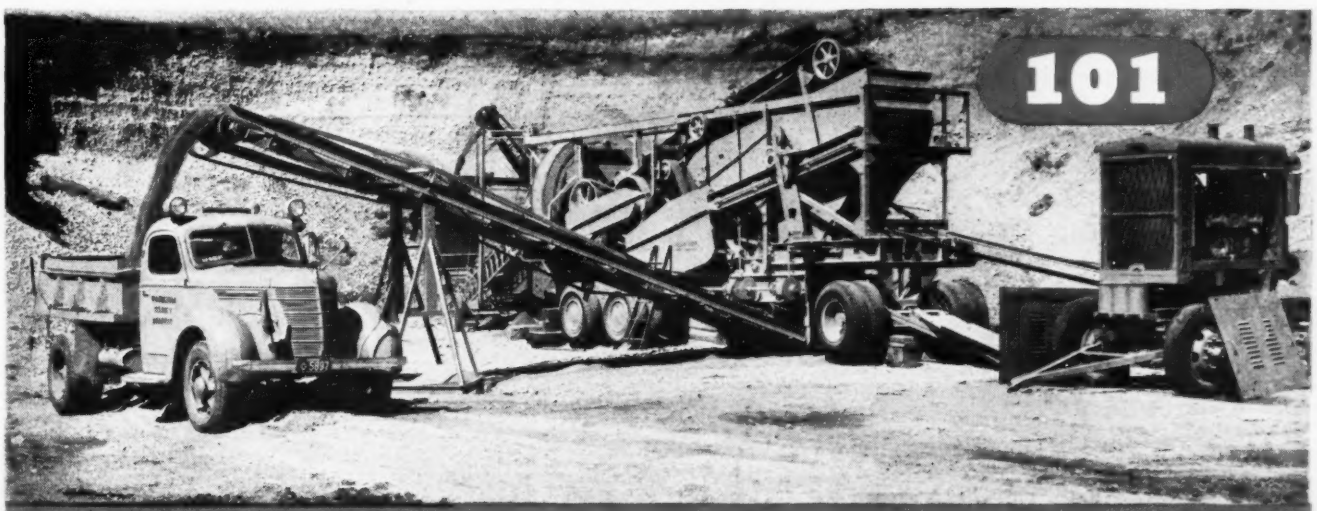
QUAKER RUBBER PRODUCTS *custom made for every industrial use*

1036
3018
4X12
30
7 Tons Per Minute

The secret of the tremendous production of the "101" Portable Crushing and Screening Plant lies in the high operating speeds of its 1036 jaw crusher and 3018 roll crusher; and in a completely balanced design which provides unusually wide (30″) feed and delivery conveyors, and an unusually large (4′ x 12′) vibrating screen of the highly efficient, positive-throw type. Thus, there are no bottlenecks to retard the flow of material through the closed circuit. Production figures naturally vary with local conditions, and with the size of finished product, but many owners report production well in excess of 7 tons per minute.

Your nearby A-W Distributor will be glad to tell you the whole story of the magnificent "101," leader of a complete line of portable and stationary, gravel and rock plants; each designed to do a particular job with maximum efficiency.

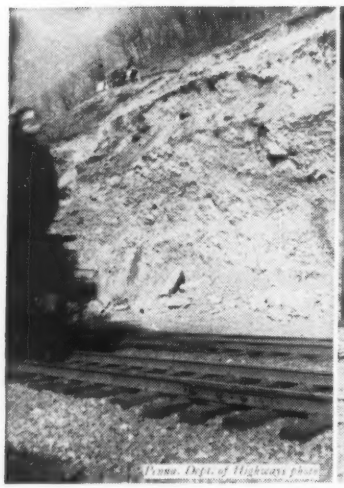
AUSTIN-WESTERN COMPANY • AURORA, ILLINOIS, U. S. A.



BUILDERS OF ROAD MACHINERY
Austin Western
SINCE 1859

Would You Like To Blast Here

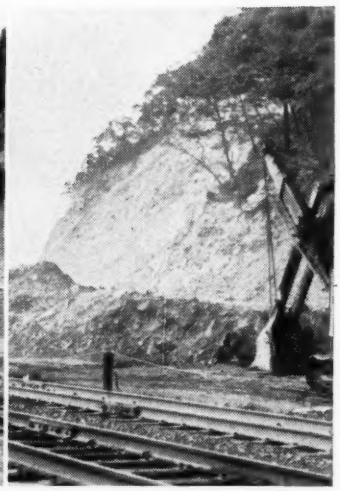
with 25 trains a day passing by?



As blasting got under way, cliff wall directly beside the track looked like this. Note shovel above, clearing first bench. At one point, cliff actually overhung tracks but was successfully blasted without stopping trains.

Close-up of wagon-drills preparing for 118-hole shot. Highway 22 runs between railroad and Susquehanna River in background. Tracks will be moved to new face, and highway level raised.

The mountainside removal job comes down to grade. Outside edge of bench is approximate position of original cliff face. Tracks are Pennsylvania Railroad's busy Williamsport Division.



Close-up showing shovel ready to move in on rock broken to bite-size. Note how rock heaved toward center of bench—away from tracks and away from backwall—typical result of a Rockmaster shot properly planned and executed.

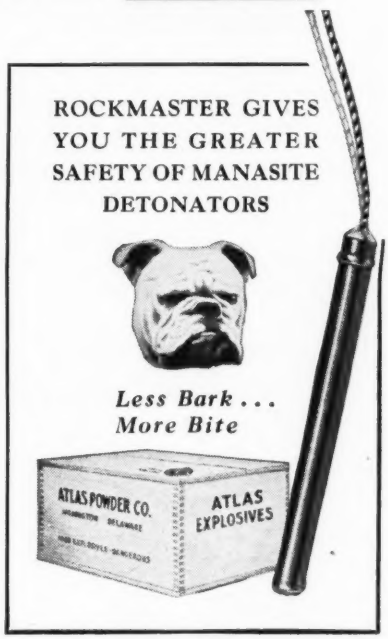
They *Did* it! . . . with the

ROCKMASTER Blasting System, *of course!*

On U. S. Route 22 north of Harrisburg, Pa., blasting history has been written by the Central Pennsylvania Quarry, Stripping and Construction Company. They have blasted away over half a million cubic yards of Peters Mountain—lying directly beside the Pennsylvania Railroad's Williamsport Division—*without holding up busy track schedules—and without "loading light"!*

This ticklish blasting problem was right down the alley for the Rockmaster blasting system in the hands of the contractor's experienced engineers. The mountainside has been brought down to grade by benching—upwards of 150 holes being shot at one time—as deep as 24′ and average depth of 18′. Rows of holes were arranged to shoot with milliseconds of delay between rows. And by timing the outside row to shoot *last*, throw was directed away from the tracks. With outside holes *fully loaded*, outstanding breakage was obtained —breakage that would have been impossible before the advent of the millisecond delay Rockmaster system, introduced and pioneered by Atlas.

Thanks to the contractor's skilled adaptation of Rockmaster to his needs, the railroad tracks are soon to be moved closer to the mountainside, allowing for widening of the road beside the tracks and elimination of a dangerous underpass.



"ROCKMASTER"—Trade Mark
Manasite: Reg. U. S. Pat. Off.

ATLAS EXPLOSIVES
"Everything for Blasting"

CHEMICALS ATLAS EXPLOSIVES

ATLAS POWDER COMPANY, Wilmington 99, Del. • *Offices in principal cities* • *Cable Address—Atpowco*

SURVEYING ALTIMETER—With a range of 2,000 ft., the new W&T precision altimeter will determine elevations accurately in one-tenth the time required by vertical angle or spirit leveling. It is a sensitive instrument, yet designed to withstand rough handling. Matched sets of altimeters are supplied to obtain maximum accuracy in utilizing the two-base method of precise altimetry.—**Wallace & Tiernan Products, Inc., 1 Main St., Belleville 9, N. J.**

NON-TWIST SWIVEL FOR WIRE ROPE—Miller annular ball-bearing swivel prevents wire rope from twisting and unlaying. Because swivels enable loads to arrive at their destination in almost the same position as they leave point of origin, they have proved useful for hoisting steel sheets, beams, loading pipes, handling telephone poles, setting forms, and loading various types of oil field equipment. Weight of swivel is 32 lb., enough to return whip line to ground when using a long boom. Swivels are available in sizes for 1-, ¾- and ⅝-in. wire rope. They are cadmium-plated to prevent rust and deterioration.—**General Machine & Welding Works, 1100 E. Second St., Pomona, Calif.**

SEWAGE PUMP—Adapted to the pumping of miscellaneous pulps, sewage, or trash, a non-clog pump has grease-lubricated bearings for protection. Shaft and bearings have been increased in size, and the rotor can be replaced without exposing bearings to dirt or changing their adjustment. Wear at the impeller inlet is taken up by an external adjustment.—**Economy Pumps, Inc., Hamilton, Ohio.**

TRIMO-ALLOY

INDUSTRY'S BIG, TOUGH, ALL-ALLOY STEEL

PIPE WRENCH

DROP FORGED

Whatever size Trimo-Alloy Pipe Wrench you need, buy and use, you get "oversize" power and durability—because it's the only wrench on the market that is entirely made of drop forged alloy steel. The teeth are hardened by modern induction heat-treatment—and the whole wrench is tough in the right places to stand tremendous stress. Trimos are the most powerful wrenches ever built for industry. Put them to work wherever other wrenches are found wanting.

EVERY PART IS GUARANTEED

Trimo Alloy Pipe Wrenches are made to exceed Government Specifications .....Type II Heavy Duty.....GGG-W-651a.

Only Trimo Pipe Wrenches are manufactured throughout from alloy steels.

Only Trimo Wrenches have teeth hardened by modern induction localized heat-treating process to close Rockwell specifications.

Tests prove Trimo drop-forged steel handle capable of bearing strains up to 40,000 inch-pounds—more than double that of cast malleable handles in same size wrench.

Trimo's frame design is on the efficient "knee-action" principle—making possible one-hand use on otherwise two-hand jobs.

TRIMO PIPE CUTTERS

Drop forged steel—easy to change from 1-wheel to 3-wheel cutter—two tools in one!

TRIMONT MANUFACTURING CO.
DIVISION OF AETNA INDUSTRIAL CORP.
63 AMORY STREET, ROXBURY, BOSTON 19, MASS.

Pipe Wrenches • Chain Wrenches • Monkey Wrenches • Stillson Type Wrenches • Spud Wrenches • Utility Wrenches • Saunders, Barnes and Other Type Pipe Cutters • Pipe Vises, Chain Vises • Saw Vises • Kit and Portable Vises

L-O-N-G-E-R SERVICE LIFE IS SOLD WITH EVERY

GRIT-PROOF bearings for Alemite lubricated center shaft minimize wear on hinge castings. Wide bearing surfaces also reduce wear and assure permanent shell alignment.

Owen hinge stop design holds bottom sheave block upright and broad counterweight is shaped to protect cables and sheaves from contact with abrasive materials. Yes, Longer Service Life is sold with Every Owen Bucket.

THE OWEN BUCKET COMPANY
6020 BREAKWATER AVE. • CLEVELAND, OHIO
BRANCHES: New York, Philadelphia, Chicago, Berkeley, Calif.

OWEN CLAMSHELL BUCKETS

A MOUTHFUL AT EVERY BITE

KNOCK
ROPE TROUBLES
OUT OF YOUR PICTURE
...WITH THE LAUGHLIN

"FIST-GRIP" SAFETY CLIP

Only The Laughlin "Fist-Grip" Safety Clip Gives You Service and Protection Like This:

Won't Crimp or Crush . . . rope lasts far longer

Simple, easy to put on . . . saves time, manpower

100% Foolproof . . . can't go on backward

Super Grip . . . two clips do the work of three

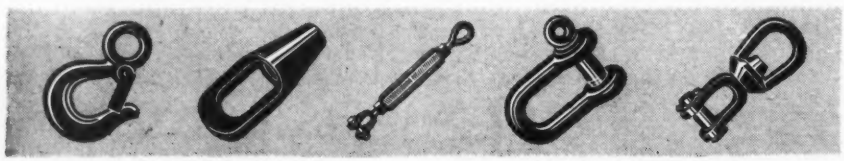
Extra Strength and Safety . . . entire clip, including bolts, drop-forged

"Fist-Grip" Clips develop 95% to 100% of the rope strength. They can make important savings in time, money and rope . . . for *you*. Distributed through mine, mill and oil field supply houses. WRITE FOR LAUGHLIN'S CATALOG #140 . . . up-to-the-minute data on industrial fittings.

THE THOMAS LAUGHLIN CO., DEPT. 1, PORTLAND 6, MAINE.

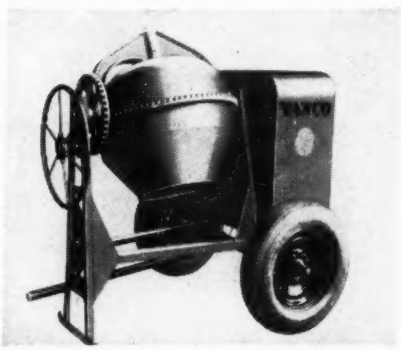
LAUGHLIN

THE MOST COMPLETE LINE OF DROP-FORGED WIRE ROPE AND CHAIN FITTINGS



TRUCK RADIO—Illustrated is Motorola 2-way FM radio equipment installed in the Duplex dump-truck scraper exhibited during the recent Road Show at Chicago. Unit was in communication with the Motorola booth—about three-fourths of a mile across the grounds. Fourteen other similarly equipped vehicles served as a communication network over which much Road Show business was conducted.—**Motorola, Inc., 4545 Augusta, Chicago 51, Ill.**

LEAF AND LITTER COLLECTOR—A new leaf and litter collector unit is available to municipalities. It has such features as an hydraulic jack under the trailer tongue to facilitate hitching and one under the dump body to dump the load in one minute; a vacuum snout on a free wheeling tricycle under carriage for use under and around parked cars, around sharp corners, into driveway entrances, etc.; a self-contained 40-hp. Ford industrial power unit; and hopper capacity equal to 10 or 12 truck loads of non-compacted leaves. —**Good Roads Machinery Corp., Minerva, Ohio.**



HALF-SACK CONCRETE MIXER—Rated at 3½ cu.ft. and 10 percent capacity, model 35-25UR gasoline engine driven concrete mixer is mounted on a high-speed trailer with pneumatic tires. Mixer includes a heavy semi-steel cast bowl and yoke, mixing blades designed for fast action, and a tilt gear for two-side pouring. Tow tongue is retractable.—**Vanco Products, Inc., Colorado Springs, Colo.**

Crushes 300 TONS A DAY...

STATE OF NORTH CAROLINA
STATE HIGHWAY AND PUBLIC WORKS COMMISSION
A. H. GRAHAM, CHAIRMAN

MERRILL EVANS
JOHN G. CLARK
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GEO. W. KANE

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RAYMOND SMITH
T. MAX WATSON
JOHN A. GOODE

EQUIPMENT DEPARTMENT
S. C. AUSTIN, EQUIPMENT ENGINEER

RALEIGH, N. C.

E. F. Craven Company
Greensboro, N. C.

Gentlemen:

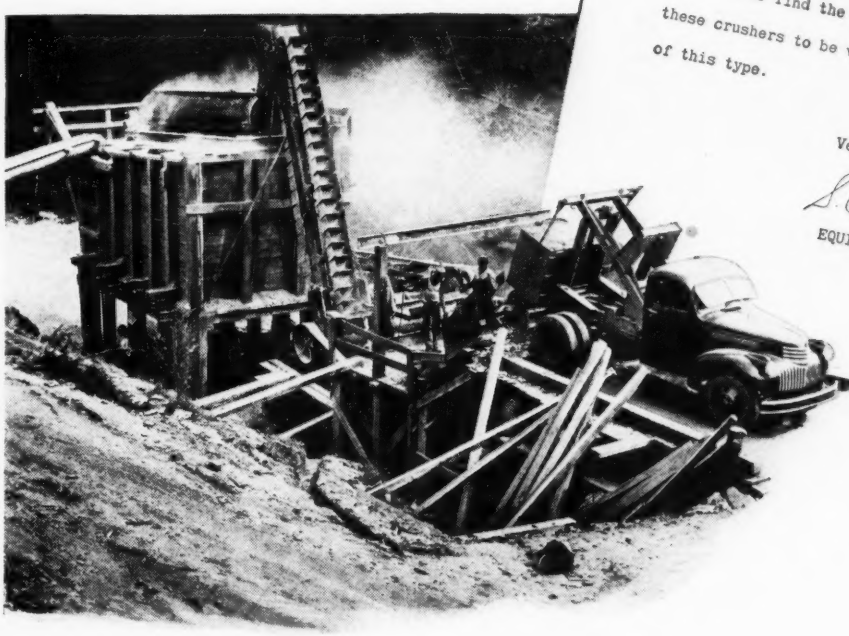
Att: Mr. F. Duval Craven

I wish to thank you very much for the pictures of two crushing plants in our Asheville Division which you forwarded me on June 27th. In this connection I wish to advise you that we find the General Motors power units used with these crushers to be very satisfactory in operating plants of this type.

Very truly yours,

S. C. Austin

EQUIPMENT ENGINEER.



This rock-crushing plant at Weaverville, N. C., is one of two the North Carolina State Highway Department powers with six-cylinder Series 71 General Motors Diesel engines.

Cuts Fuel Costs 75%

Sounds unbelievable, doesn't it? But that's just what happened when the North Carolina Highway Department's rock crusher at Weaverville was converted from gasoline to General Motors Diesel power.

Look at the records! To produce 300 tons per day, with the original engine, 55 to 60 gallons of gasoline were needed. Since converting to GM Diesel power in 1946, fuel consumption has dropped to 30 gallons of Diesel fuel a day. This alone amounts to a cost saving of approximately 75%. Add to economy the advantages of dependable steady operation, easy maintenance and instant response to varying power demands and you'll see why the plant foreman says, "Best power I ever saw. It's a dandy."

For economy, efficiency and versatility, the best answer to your power problem is a General Motors Series 71 Diesel engine. Write today for the complete story.

DETROIT DIESEL ENGINE DIVISION

SINGLE ENGINES.. Up to 200 H.P. **DETROIT 28, MICHIGAN** MULTIPLE UNITS.. Up to 800 H.P.

GENERAL MOTORS

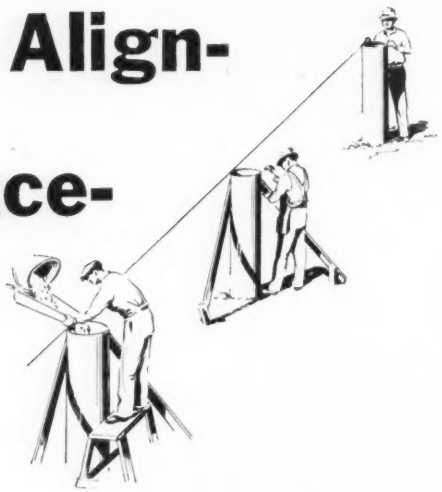
GM
GENERAL MOTORS
DIESEL POWER

DIESEL BRAWN WITHOUT THE BULK

Align-

Brace-

Pour-



CONCRETE

PIERS-COLUMNS

formed faster and

cheaper with

Sonotubes

LAMINATED FIBRE TUBING

Cut to lengths
on the job

for

one time use

INSIDE DIAMETER					
8"	9"	10"	11¼"	12"	13½"
SQUARE INCHES					
50.26	64	78.54	100	113.1	144

IMMEDIATE DELIVERY

SONOCO PRODUCTS COMPANY

BRANTFORD ONT. HARTSVILLE S. C. MYSTIC CONN.

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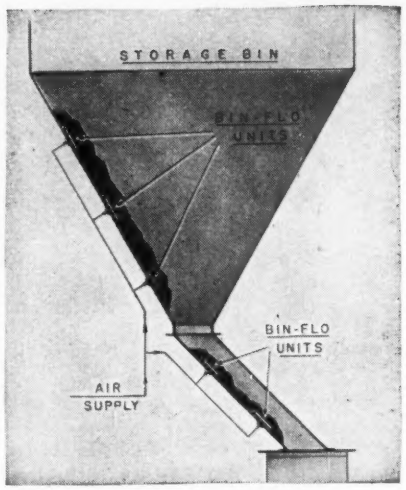
SERVES THE WORLD

PAPER CARRIERS

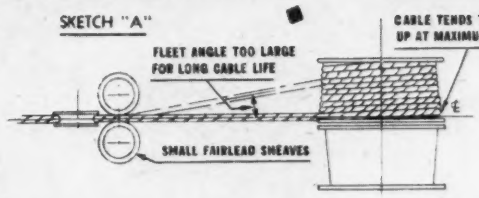


BIN FLOW AERATOR—Bin-Flo is a new aerating device to provide uniform and steady flow of bulk materials from bins, hoppers and chutes. Device is a small plate readily located at points where flow is restricted. Low-pressure air is injected into the material through a special fabric diffuser, causing material to flow freely.—**Bin-Dicator Co., 14615 East Jefferson Ave., Detroit 15, Mich.**

HARD-FACING ALLOYS — Two new hard-facing alloys provide wear protection on heavy equipment. These are Stoody self-hardening 21 for applications involving extreme abrasion with moderate impact and Stoody 1027 for severe impact with moderate abrasion. Recommended for such equipment as tractor parts, power shovels, crushers, impellers and mechanical loader lips. Alloys include chromium, manganese, silicon, carbon and zirconium. Recommended for down-hand applications. **—Stoody Co., Whittier, Calif.**

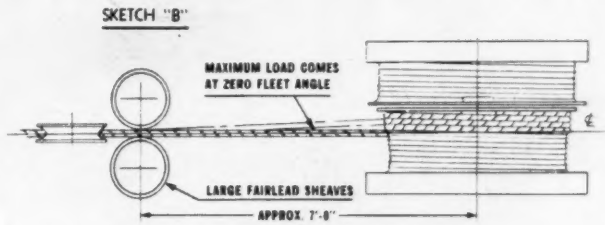
PORTABLE PIPE BENDER — Weight of jack and frame of hydraulically operated unit is only 83 lb. Jack is readily removable from frame and can be used for other purposes. Device bends standard pipe and conduit in sizes from ¾ to 2½ in. The 30-in. steel frame is electrically welded and heavily reinforced. Unit includes ¾-, 1-, 1¼-, 2-, and 2½-in. dies. Bender is called "Lightweight Champ." — **Electric Cord Co., 30 Church St., New York 7, N. Y.**

Look at a LIMA Dragline from these angles



1. Proper fleet angle is an important factor in cable life: the smaller the angle, the less the wear on cable by flanges of the sheave. Sketch "A" at right, shows a common method of cable reeving where large fleet angle and piling at maximum load cause excessive cable wear. Sketch "B" shows the LIMA method, achieving small fleet-angle—with *zero angle at maximum load,* by proper placement of drum with relation to fairlead and large diameter drums with short traverse. Cable wear is further protected by large, deep throated sheaves and grooved drums.

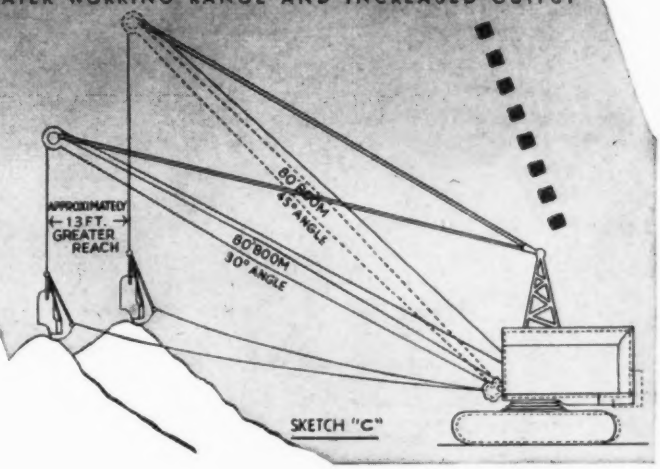
1. SMALL FLEET ANGLE OF THE FAIRLEAD CABLE MEANS LONGER LIFE AND LESS DOWN TIME



2. Sketch "C" illustrates how a well balanced LIMA dragline with 80 foot boom, working at 30° angle, achieves 13 feet greater reach than a light weight machine with same length boom, but which cannot go lower than 45° without tipping.

LIMA draglines have low center of gravity, proper weight distribution and long wide crawlers—all contributing to lower possible work angle of boom and greater working ranges.

2. LOW WORK ANGLE OF THE BOOM MEANS GREATER WORKING RANGE AND INCREASED OUTPUT



LIMA draglines are designed and built for dragline work. Every part is engineered for greatest output with minimum maintenance. Sizes and capacities for practically every requirement. Get all the facts before you buy your next dragline . . . LIMA also makes power shovels from ¾ to 6 yards and cranes from 13 to 100 tons.

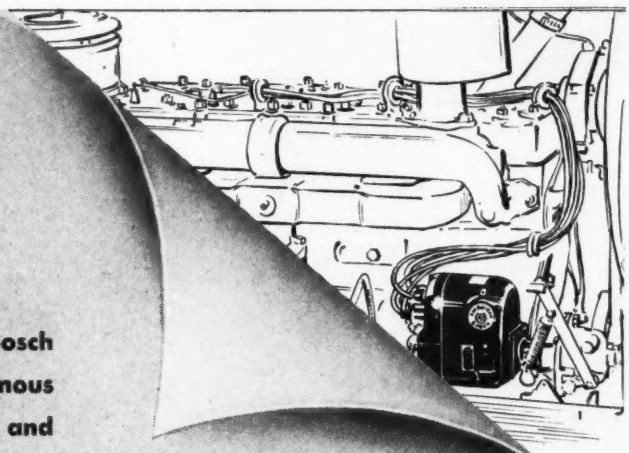
Lima Shovel and Crane Division

LIMA, OHIO

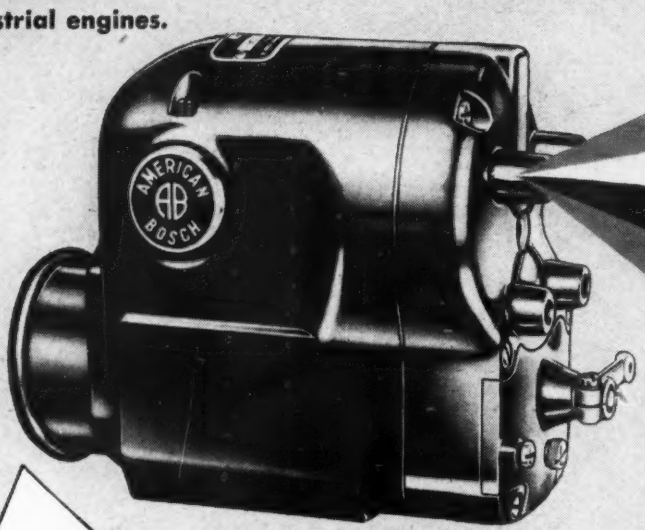
OTHER DIVISIONS: *Lima Locomotive Works Division; Niles Tool Works Co.; Hooven, Owens, Rentschler Co.*

LIMA HAMILTON CORPORATION

For STAR PERFORMANCE

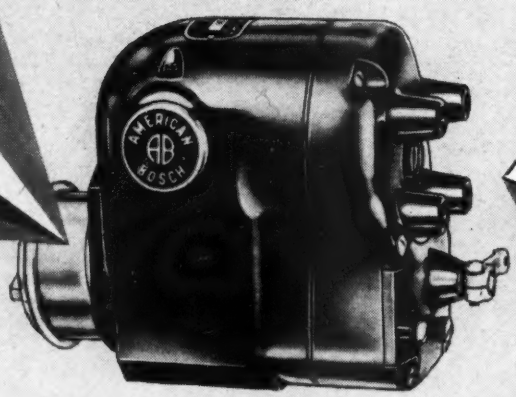


Modern . . . rugged . . . reliable — American Bosch super-powered magnetos have long been famous for outstanding performance on farm, utility and industrial engines.

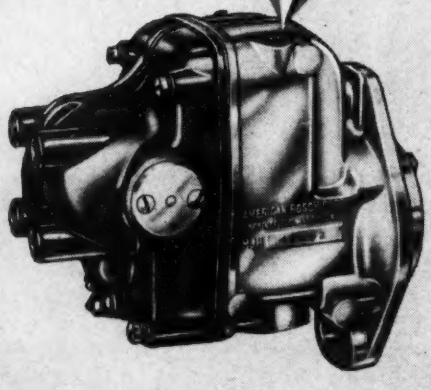


A leading choice for heavy duty on the largest engines—MJA Series Magnetos

An outstanding favorite in the medium-size class — MJB Series Magnetos



Ideal for the modern, lightweight, high-speed engines — MJH Series Magnetos

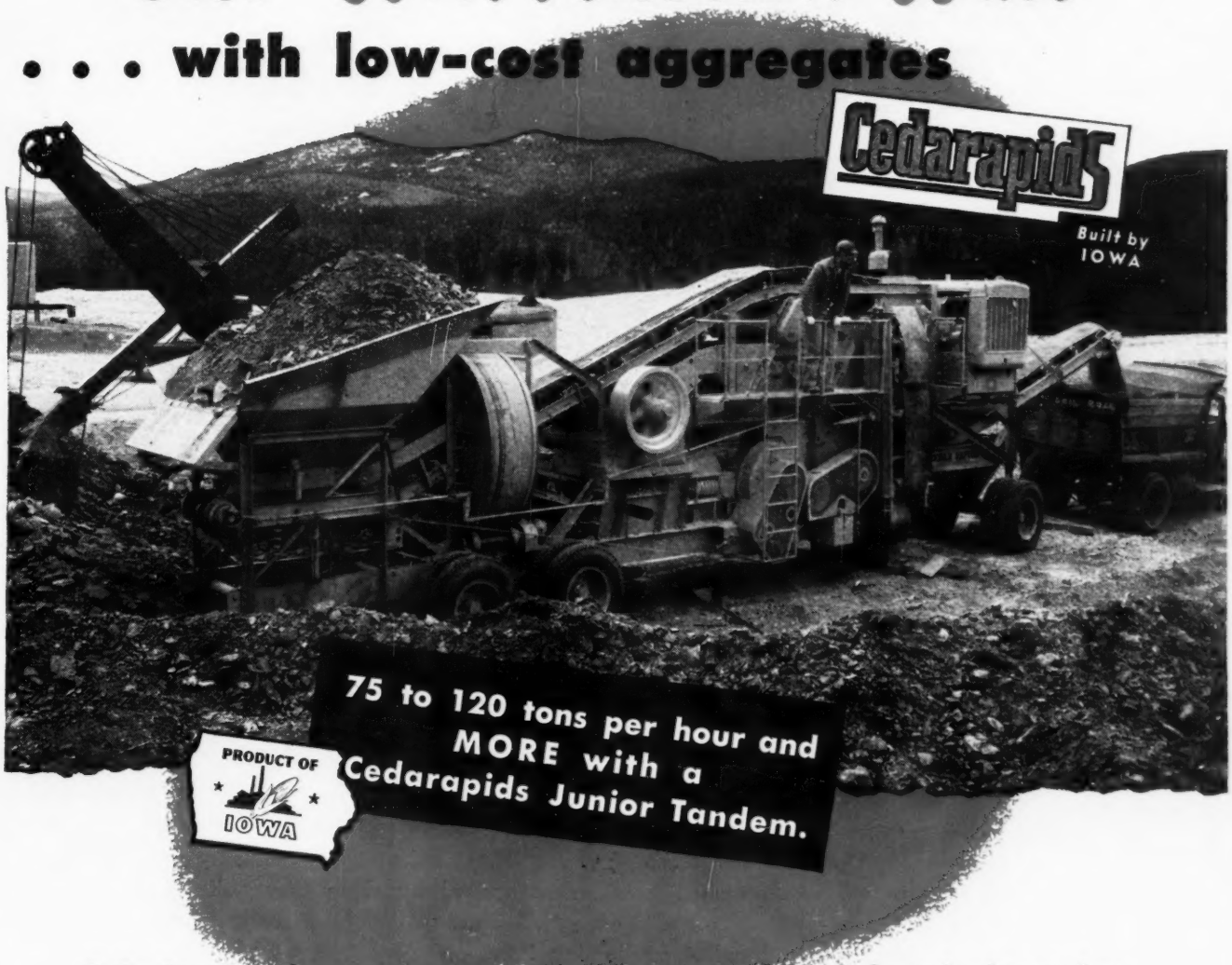


AMERICAN BOSCH

AMERICAN BOSCH CORP. • Springfield 7, Mass.

Cut construction costs

. . . with low-cost aggregates



● In times like these, everything possible must be done to cut the high costs that are retarding construction work of all kinds. Modern crushing and screening plants with low operating and maintenance costs and high capacities will lower the cost of producing one of the basic raw materials. Cedarapids offers the Junior Tandem for that job.

It's a complete gravel crushing and screening plant that can be quickly converted to a crushed stone plant simply by adding a Cedarapids portable primary. The addition of a washing plant converts the Junior Tandem to a multi-sized washed gravel and stone plant. Here's flexibility, portability and economy that mean low-cost aggregates for every construction job.

You can feed a Junior Tandem with a shovel, dragline or with any of the other standard feeding units, move it wherever necessary, set it up for operation with the minimum of time and expense and crush and screen whatever is available close to the job.

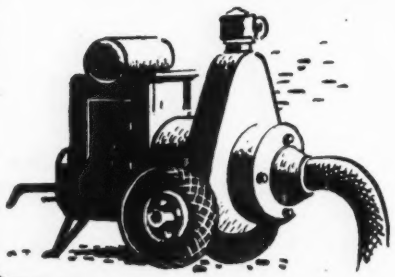
When you buy a crushing plant—buy the best—buy Cedarapids. Better get the facts from your nearest Cedarapids dealer today.

The Iowa Line *of Material Handling Equipment Includes*

ROCK AND GRAVEL CRUSHERS • BELT CONVEYORS • STEEL BINS • BUCKET ELEVATORS • VIBRATOR AND REVOLVING SCREENS • STRAIGHT LINE ROCK AND GRAVEL PLANTS • FEEDERS • TRAPS • PORTABLE POWER CONVEYORS • PORTABLE STONE PLANTS • PORTABLE GRAVEL PLANTS • REDUCTION CRUSHERS • BATCH TYPE ASPHALT PLANTS • DRAG SCRAPER TANKS • WASHING PLANTS • TRACTOR-CRUSHER PLANTS STEEL TRUCKS AND TRAILERS • KUBIT IMPACT BREAKERS

Iowa Manufacturing Company, Cedar Rapids, Iowa, U. S. A.

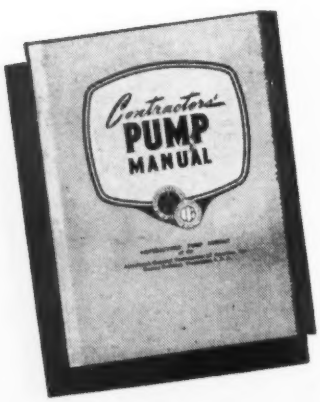
NEW AND GREATER PUMP PERFORMANCE AT HIGHER HEADS WITH THIS A.G.C. RATING PLATE!



THIS A.G.C. Rating Plate, mounted on the pump you buy, now means increased performance, greater output at higher heads — and more, much more, for your money!

New and higher Standards for pump performance have been set by the Contractor's Pump Bureau. For example: A pump rated at 20M formerly was warranted to deliver 40 G.P.M. at a 10 ft. Static Lift and Head of 80 ft. The same pump is now warranted to deliver 90 G.P.M. at the same head and lift — an increase of more than 100%.

All pumps made by the Member Manufacturers listed below will meet these new and forward-looking standards as set by the Contractor's Pump Bureau. And remember, only the pumps manufactured by these Companies carry the A.G.C. Rating Plate. Look for this A.G.C. Rating Plate on every pump you buy. It means the utmost in assured pumping performance!



PUMP USER'S MANUAL

Forty pages packed full of useful information for the pump user. Answers all questions as to pump selection for the job — what size pump to use — the do's and don'ts of pump operation — standards for measuring heads and capacities — and other technical data. Contact your dealer or write any of the companies listed below for your copy.

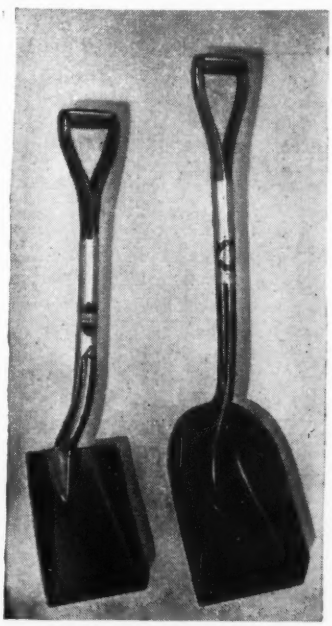
CONTRACTORS PUMP BUREAU
(ESTABLISHED 1938)
Affiliated with
THE ASSOCIATED GENERAL CONTRACTORS OF AMERICA, INC.
Munsey Building, Washington 4, D. C.

NOVO ENGINE COMPANY, Lansing, Michigan
STERLING MACHINERY CORP., Kansas City, Mo.
WORTHINGTON PUMP & MACHINERY CORP., Holyoke, Mass.
BARNES MANUFACTURING CO., Mansfield, Ohio
CARVER PUMP COMPANY, Muscatine, Iowa
C. H. & E. MANUFACTURING CO., Milwaukee, Wisconsin
CHAIN BELT COMPANY, Milwaukee, Wisconsin
CONSTRUCTION MACHINERY CO., Waterloo, Iowa
THE GORMAN-RUPP CO., Mansfield, Ohio
THE JAEGER MACHINE CO., Columbus, Ohio
MARLOW PUMPS, Ridgewood, N. J.

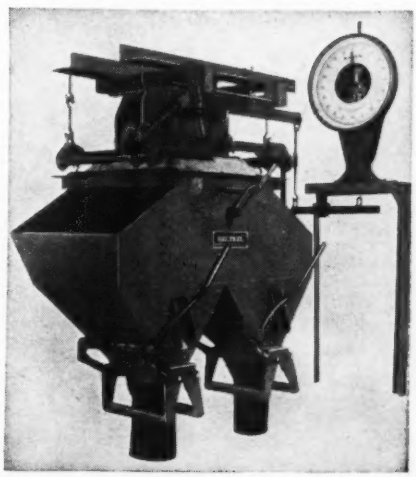
ROCKETS
building
progress
SKY HIGH
THE BEAMISH
BRICKLAYING
GUIDE RAIL
Urgent need for reconstruction in bombed Britain prompted the invention of the bricklaying Guide Rail. Practical, accurate; tests have proved that unskilled labour can lay 100 bricks in ½ an hour. Speed up YOUR bricklaying. Send NOW for details.
British and foreign Pats. pending
Price, Complete Set. $66.98. Sample Set (Part of complete set) $29.65. Packing Case, $5.4. $3.3 F.O.B.
L.S.BEAMISH
SHOREHAM COURT, SHOREHAM-BY-SEA
SUSSEX, ENGLAND

B.T.U. SLIDE RULE—Pocket-size B.t.u. calculator slide rule permits quick and accurate determination of correct size of home heaters. The top scale determines the volume of the area to be heated, while the bottom scale determines the amount of B.t.u.'s required based on type of construction and geographical location of the building. Size and type of heater to give proper B.t.u. heat requirement are obtained from data on rear side of rule. — **Perfection Stove Co., Cleveland 4, Ohio.**

TRENCH ROLLER — On a new trench roller the seat pivots around the steering post so that the operator faces his work at all times. A hydraulic jack permits raising or lowering the outboard wheel to level the machine when working in any trench up to 13 in. Roller is powered by a four-cylinder, air-cooled engine. The transmission provides two speeds in both forward and reverse. There is a 50-gal. sprinkling tank with mats on both rolls that run in the trench, and spring-tensioned scrapers on the rolls and adjusting wheel. A short wheelbase of 90 in. and a short turning radius are other features of the roller, which is available with either 16-in. or a 20-in. face compression roll.—**The Huber Mfg. Co., Marion, Ohio.**



BLADE EDGES
GUARANTEED SPLIT-PROOF
INGERSOLL SHOVELS
"The Borg-Warner Line"
Write for Catalog and Prices
INGERSOLL STEEL DIVISION
BORG-WARNER CORPORATION
New Castle, Indiana
Plants: New Castle, Ind.; Chicago, Ill.; Kalamazoo, Mich.



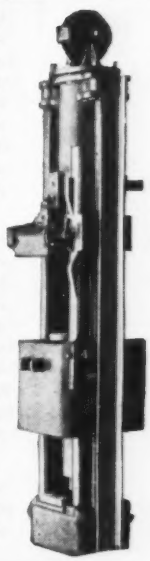
DUAL BATCHERS — Two new batchers for roadbuilders include a 2½-cu.yd. capacity dual aggregate batcher and a 28-cu.ft. capacity dual cement batcher. They are designed to eliminate one or more truck stops at the plant, providing faster material handling service. Accompanying photograph illustrates the dual cement batcher.—**Hetzel Steel Form & Iron Co., Warren, Ohio.**

RUGGED
AT ANY AGE
WARRINGTON-
VULCAN
Single-Acting Steam
PILE HAMMERS

• How many powerful blows in a Warrington-Vulcan Single-Acting steam pile hammer? You'd spend years counting them because we've seen some mighty old Vulcan hammers putting out the same powerful blows that whipped their first pile driving job.

Yes, Vulcan pile hammers are rugged at any age because they're built strong to function easily and economically without mechanical interruption. They operate at medium steam pressure to deliver a moderate frequency of low velocity blows from a relatively heavy ram.

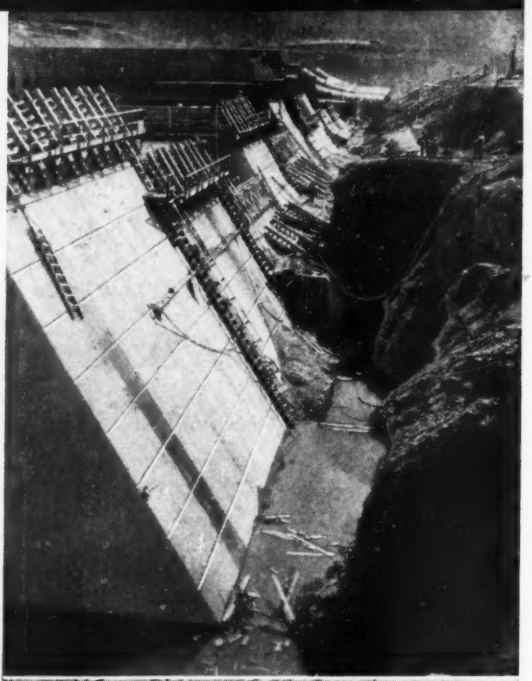
Write today for detailed information on this durable, dependable, time-tested pile driver.



VULCAN IRON WORKS
Since 1852
331 North Bell Avenue
Chicago 12 ---Illinois

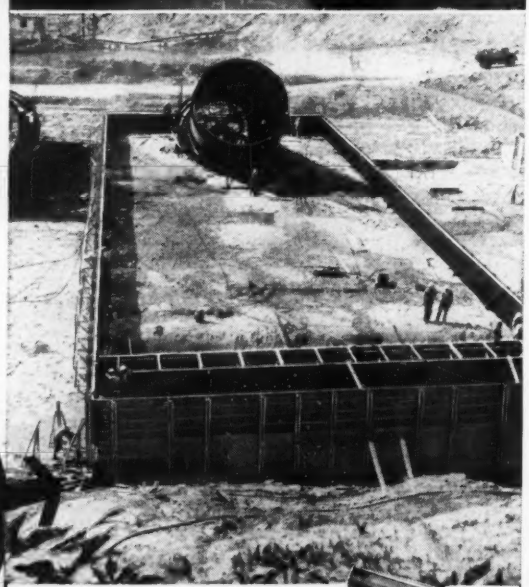
BLAW-KNOX

applies its STEEL FORM *"Know How"*
TO CONCRETE GRAVITY DAMS



Blaw-Knox has proved the practicability of its forming method for pouring concrete monoliths of gravity type dams—a design of steel form which is easily handled through successive lifts—and which can easily be aligned for all job conditions.

It would be our pleasure to tell you about this tried and proved system of BLAW-KNOX STEEL FORMS for concrete monoliths. You will incur no obligation by asking for this information.



This accurate alignment is quickly achieved by mechanized adjustment.

Blaw-Knox STEEL FORMS have been serving engineers and contractors for over 40 years. The Blaw-Knox record of accomplishment is shown in Catalog 1836. Send for a copy.

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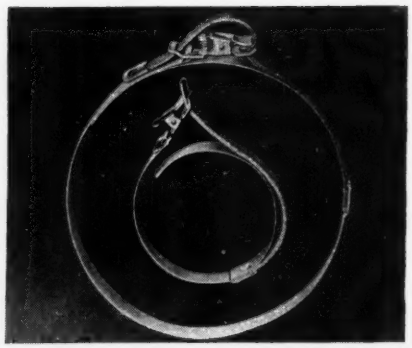
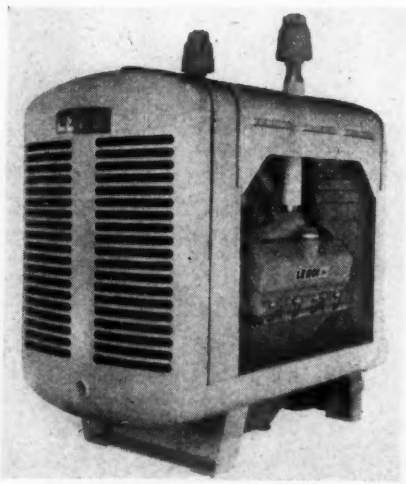
BLAW-KNOX *has the* STEEL FORM "Know How"



FLEXIBLE CONDUIT CLAMP—Flexfast is a low pressure clamp for use with flexible conduits. Provides fast, positive clamping action over diameters from 1½ to 37 in., each size having a wide range of take-up. Requires no tools for quick and easy set-up or release. Combines an overlapping one-piece, non-rusting nickel clamping band with a strap and buckle take-up. Constructed of only three parts permanently integrated into single unit.—**Flexible Tubing Corp., Branford, Conn.**

ROTARY CONCRETE DRILL—Depending upon a rotary pulverizing action rather than on sharp cutting edges or hammer-like blows, this new concrete termite rotary drill makes straight, clean, true holes through any masonry-like material very efficiently. Concrete termites are used with any electric drill and no water is necessary. With a ½ in. drill 3 in. of concrete can be drilled in less than 50 sec. Drills are available in 1/16-in. sizes for ½ in. to 1½-in. dia. There is an extra-length shank up to 3 ft. long.—**Concrete Termite Drill Co., 1627 E. Walnut St., Pasadena 4, Calif.**



NEW V-8 ENGINE—Valve-in-head unit rated up to 135 hp. runs on gasoline, butane, or natural gas. Compact, easily accessible, and light in weight. Has aluminum pistons and push-button electric starting.—**Le Roi Co., 1706 S. 68th St., Milwaukee 14, Wis.**

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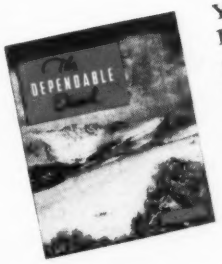
Heaped loads . . . steep grades . . . long or short hauls. That's when Cummins Diesels "pay off" . . . hauling more material at low cost.

CUMMINS Dependable DIESEL
SINCE 1918 PIONEER OF PROFITABLE POWER THROUGH HIGH SPEED DIESELS



Your Cummins Dealer will show you other examples of the performance of Cummins Diesels in the current issue of *The Dependable Diesel.*

Colonial Sand and Stone Company, Inc., New York City, finds Cummins Diesels better for its job. One of the first contractors to find Cummins Power profitable for short hauls, Colonial now operates a total of 197 Cummins Diesels.

Colonial's Cummins-powered fleet includes 10 new Model D 664-MA Federal ready-mix trucks powered with Model NHB-600 Cummins Diesels, and two FK Macks recently repowered with Model NHB-600 Engines. Used to haul heavy slag and sand in New York's hilly Eastchester area, the repowered FK Macks cut delivery time 50 per cent and fuel costs 25 per cent.

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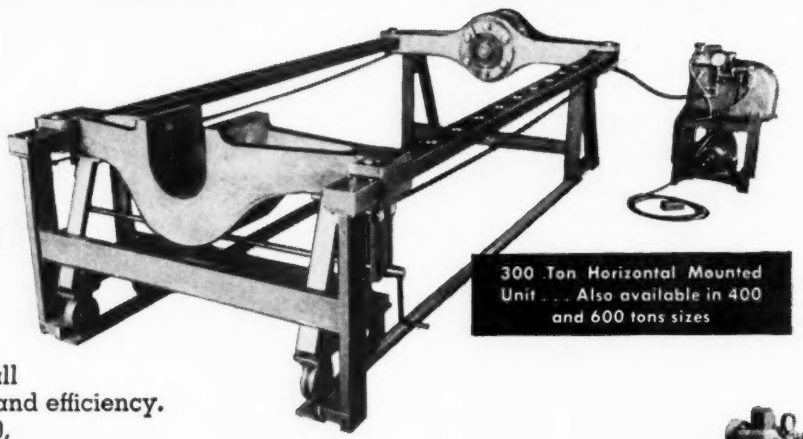

300 Ton Horizontal Mounted Unit . . . Also available in 400 and 600 tons sizes

Here is your practical answer to those many heavy forcing jobs — a versatile Rodgers Forcing Press with all the features of operating convenience and efficiency.

The stationary model comes in 300, 400 and 600 tons sizes, with either horizontal or 75° inclined mounting; a portable model is available in 100 or 200 tons capacities. Hydraulic power is supplied with either hand or power-driven pumps. Remote controls on power-driven pumps permit operator to stay close to the work, assuring accuracy of the job.

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The Rodgers Portable with horizontal frame mounting . . . Made in 100 and 200 tons capacities

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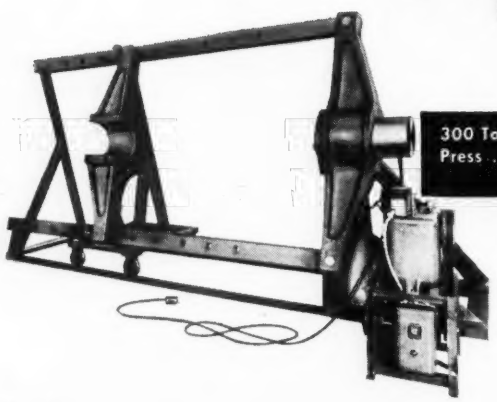

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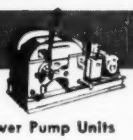

Power Pump Units

Portable Presses

New PUBLICATIONS From MANUFACTURERS

The catalogs and bulletins reviewed below will keep you posted on latest developments in construction equipment and materials available for your use

CONVEYOR BELT FASTENERS—Circular tells of a new line of fasteners and repair plates for heavy-duty conveyor belts. So designed that they can be applied anywhere, these "Plategrip" belt fasteners pull belt ends together into a smooth, flexible, tight joint. Made of heavy-gage steel to withstand any load the belt can safely carry, they make a smooth flush joint that easily passes under strippers. A 2-sided joint permits use of both sides of a belt. Plategrip fasteners are provided for belts from ¼ in. to 1½ in. thickness and packaged in sets of 10 of a size to a box. Companion repair plates are also available for repairing tears and cuts or for inserting patches in worn spots.—**Armstrong Bray & Co., 5364-76 Northwest Highway, Chicago, Ill.**

TIMBER CONNECTORS—Substantial savings in hardware and lumber when split ring connectors are used instead of bolts is shown in a bulletin just out.—**Timber Engineering Co., 1319 Eighteenth St., N.W., Washington 6, D. C.**

SOUNDPROOF TILES — Bulletin 39-B, 32 pp., has been issued to provide data on Acoustone "F", mineral acoustical tile, Motif'd Acoustone, mineral acoustical tile with decorated surface and Auditone, a wood fiber acoustical tile. Each type of tile is fully described, its function and utility explained, installation methods set forth in diagrammatic form and specifications listed.—**United States Gypsum Co., 300 W. Adams St., Chicago 6, Ill.**

CLOSE-COUPLED CRANE CARRIAGES—New 4-p. two-color bulletin, features short wheelbase crane carriages with removable rear section of frame, easily convertible from lifting crane or magnet to shovel, trenchhoe or dragline. Comparison charts show increased capacity of mounted crane over truck or crawler mountings. Standard dimensional data given for all models, also general specifications and other pertinent data.—**Six Wheels, Inc., 1584 E. 20th St., Los Angeles 11, Calif.**

ROBINSON *Air-Activated* CONVEYOR

Move Your Cement from the Siding

Low volume air means minimum load on the compressor, an important cost item.

Moisture-free air means clean, non-encrusted piping.

Low maintenance equipment means freedom from costly shut-downs or high parts inventory.

The Robinson Air-Activated System operates with no continuously moving parts such as gears, screws, or feeder apparatus. Maintenance with it is negligible.

Most of the large dam contractors have used and are using the Robinson System for handling bulk cement from hopper cars to job. The equipment is part of their "stable". Perhaps you, too, would lower your cement handling costs by using this system.

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...By low volume air

...By moisture-free air

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Whether it's a question of speed, ease of control, operating economy, minimum "down times", minimum loss of time between jobs, structural strength or general all around dependability—records on thousands of jobs prove CLEVELANDS meet fully the toughest assignments.

And some of the reasons why are: CLEVELANDS correct full-crawler wheel-type design—fine engineering—sturdy, rugged unit-type construction with all dead weight eliminated—a wide range of transmission-controlled speed combinations—ample, correctly applied power for the roughest going—low fuel consumption.

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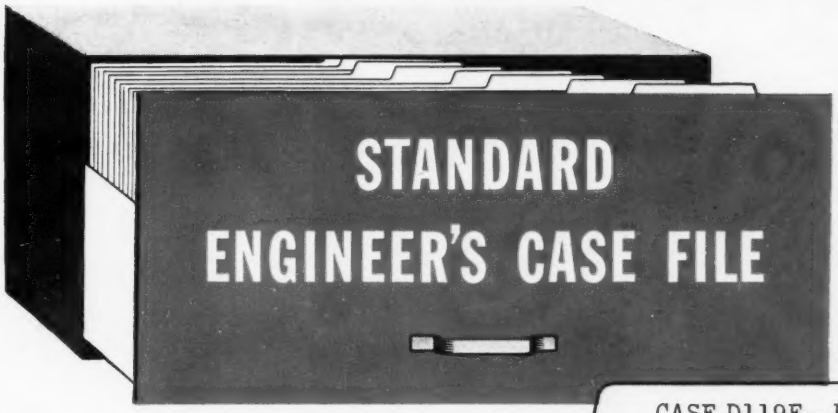
RUST PREVENTION—A new descriptive catalog titled "Rust-Oleum Stops and Prevents Rust" outlines qualities of company's laboratory-and-field tested rust preventive products for industrial, railroad, marine, farm and general use. Catalog's concluding section outlines recommendations for the use of Rust-Oleum on all building materials requiring a liquid sealer (such as concrete, brick or wood) as a waterproofing agent. The uses for five kinds of Rust-Oleum oils are also outlined.—**Rust-Oleum, 2425 Oakton St., Evanston, Ill.**

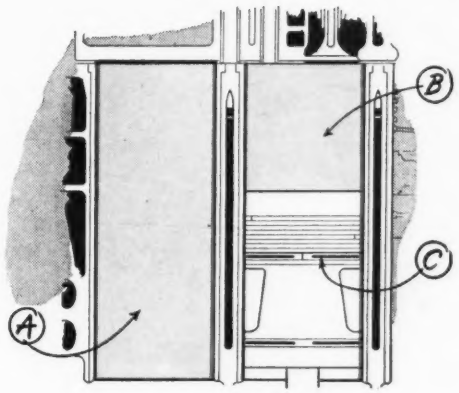
RAM-TYPE BENDING MACHINE—An 8-p. bulletin describes and illustrates an entirely different and simplified method of ram bending in which there is no repositioning of the dies or relocating of the material when bending up to 180 deg. in one continuous operation. A simple initial setting of duplicator stop will make an unlimited number of same bends, if desired. The special design and construction gives a virtually clear "table top" space in which to handle the material being bent. Push button controlled for maximum production output. "Jog" button provided to facilitate set-ups quickly from field measurements or "lifted" bent-wire templates. Accurate duplications of special parts formed to templates. Equipped with standard die equipment for bending up to 2-in. extra heavy weight steel pipe, it will bend coils, return bends and special curves. Dies available for angle iron, channels, reinforcing bars, flat bars, etc.—**Wallace Supplies Mfg. Co., 1308 West Diversey Parkway, Chicago 14, Ill.**

BETTER CONCRETE—A 6-p. folder shows how "Trimix," a liquid admixture, speeds up the handling, transporting and placing of concrete, mortar, stucco and cement plaster mixes, accelerates finishing operations, and adds to the strength and durability of completed structures. —**Building Products Division, L. Sonneborn Sons, Inc., New York 11, N. Y.**

INSTRUMENTATION DATA SHEETS—This manufacturer is preparing a perpetuating loose-leaf handbook of industrial instrumentation. Among the sheets are these—"Ratio flow control in activated sludge plants," "Automatic control of bar screen cleaning in sewage plants," "Flow measurement for sewage disposal plants" and "Separate sludge digesters require complete instrumentation."—**The Brown Instrument Co. division of Minneapolis-Honeywell Regulator Co., Philadelphia 44, Pa.**



CASE D119E—REDUCING WEAR ON LINERS IN DIESEL ENGINES



DIESEL ENGINE LINERS AND PISTON

In high-speed Diesel engines lubricated with RPM DELO Diesel Engine Lubricating Oil, wear on liners was held to a minimum with little variation over their entire areas. A constant lubricating film was maintained on them even in high-temperature belts. RPM DELO Oils are recommended for all types of Diesels. Come in all viscosity grades necessary for your engines.

A. Special additive provides metal-adhesion qualities...keeps oil on all parts whether hot or cold, running or idle.

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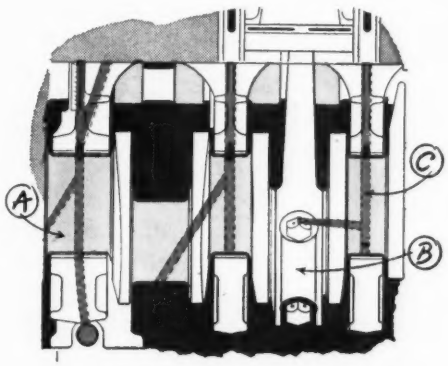
C. Contains detergent which keeps rings clean and operating freely...prevents scratching and gouging of liners.

RPM DELO Diesel Oil will not corrode any bearing.

CASE D119F—PROLONGING THE LIVES OF BEARINGS IN DIESELS



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No bearing failures occurred between overhaul periods in Diesel engines used in the toughest service when they were lubricated with RPM DELO Diesel Engine Lubricating Oil.

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DIESEL ENGINE RPM DELO LUBRICATING OIL

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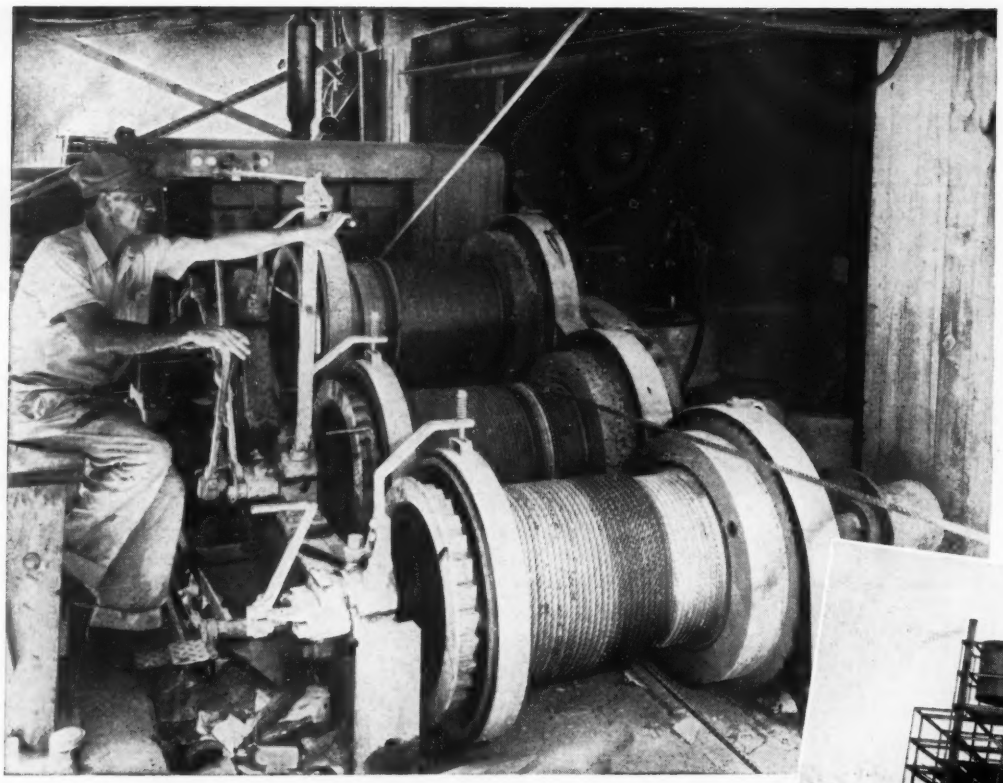

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. . . for those Big Jobs!

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Every part is carefully engineered for its particular duty . . . every piece is accurately made to provide easy operation, low cost maintenance and safe and dependable performance.

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Special bulletins giving complete specifications and construction details are available on Clyde GASOLINE HOISTS . . . ELECTRIC HOISTS . . . STEAM HOISTS . . . WHIRLEYS . . . CAR PULLERS . . . BUILDERS TOWERS . . . DERRICKS . . . ROLLERS . . . HAND POWERS.

Another important addition to progressive Dallas, Texas is the M and W Tower. This new 22 story office building has a Clyde three drum gasoline hoist to handle materials and supplies. One drum handles a concrete bucket, another drum operates a material elevator while the third drum is used for a Chicago. A 10,000 lb. line pull at 235 f.p.m. provides fast and efficient service.

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They're

- modern
- easy to use
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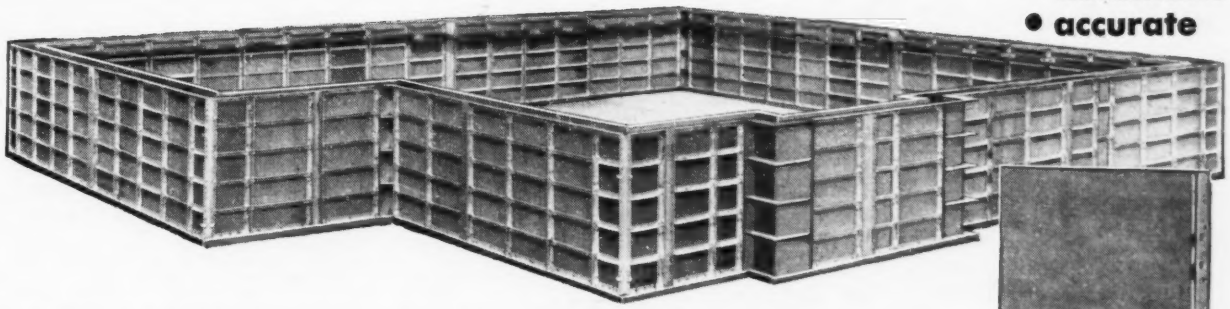
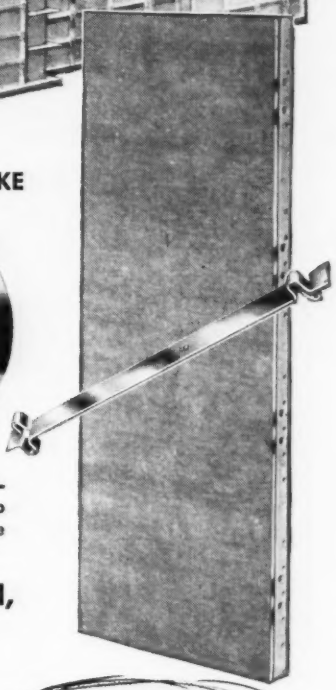
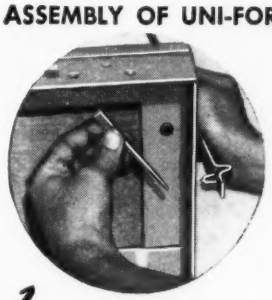
- accurate

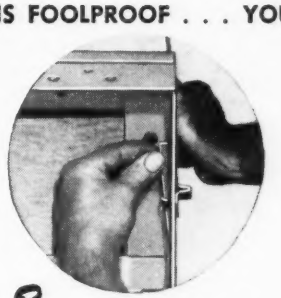




ASSEMBLY OF UNI-FORMS IS FOOLPROOF . . . YOU CAN'T MAKE A MISTAKE

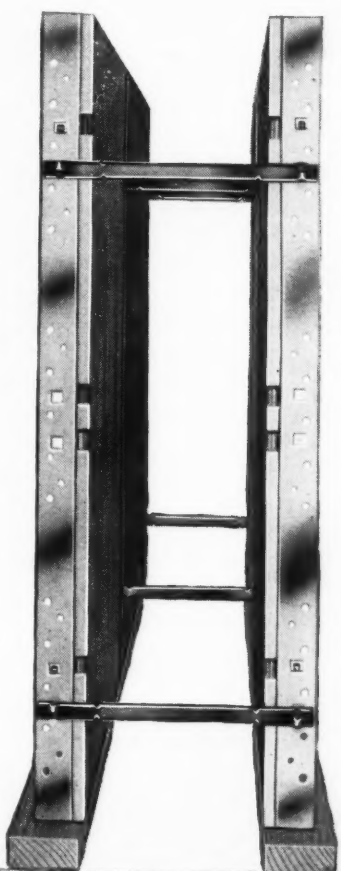


1 The first step in assembly. Put the Uni-Form Tie Loop into the Tie Hole.



2 Drop Tie Key into the Loop. This locks the UNI-FORM and Tie into one integral unit.

3 Bring the next UNI-FORM into position. Drop the second Tie Key into the Loop.



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UNI-FORMS are modular in design . . . 2'0" wide, in varying height up to 10'0". They are symmetrical . . . all sizes will member with one another. Fillers are easily handled with angles punched to match the forms.

UNI-FORMS, with Uni-Form Ties, comprise a structural form, ready to receive concrete . . . automatically accurate wall widths from bottom to top . . . alignment on one side only.

UNI-FORMS are not like ordinary wall forms —they are *permanent* equipment . . . only the plywood is expendable—steel frame is indestructible. Many have seen 20 years of service.

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Ask for Circular SA-13. It gives full information on the Uni-Form System.

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SOIL STABILIZER—There are over a dozen pictures in a bulletin showing the P&H single pass soil stabilizer at work processing both soil-cement and soil-bituminous roads, streets and airports. One machine with one operator in a single pass performs these five distinct operations: Shaving and pulverizing of the in-place materials; uniform application of all liquids; final mixing in twin pugmills; and spreading specified depth.—**Harnischfeger Corp., 4400 West National Ave., Milwaukee 4, Wis.**

FLOOD CONTROL PUMPS—The most spectacular feature of a pictorial review of interesting contracts completed by the three divisions of Hamilton-Thomas Corp.—Economy Pumps, Inc., Liberty Planers, Inc. and Klipfel Mfg. Co.—probably is a scene of the Ohio Valley flood control project, showing the giant economy flood control and drainage pumps, 36 of which were ordered for that work. The booklet also shows installations of Klipfel regulating valves and the machine tool operations of Liberty Planers, Inc.—**Hamilton-Thomas Corp., Hamilton, Ohio.**

STEEL WATER LINES—Job data are offered in an 8-p. illustrated report on steel water lines laid in the United States during 1947. Pipe diameters, pipe wall thicknesses, line pressures, coatings, engineering personnel, etc., are listed.—**Dresser Manufacturing Division, Bradford, Pa.**

HIGHWAY EQUIPMENT—A folder illustrates and describes supply tanks, highway brooms, steam heaters, and distributors.—**Littleford Bros., Inc., 457 E. Pearl St., Cincinnati 2, Ohio.**

PORTABLE GENERATORS — A 12-p. bulletin tells about a complete line of carryable gasoline-engine-driven generators. The bulletin shows in words and pictures the many uses for portable electric power. A check list is given as a guide in selecting units to meet specific requirements.—**Homelite Corp., Port Chester, N. Y.**

PIPE AND FITTINGS—An illustrated booklet on "Karbote" pipe and fittings is available which gives tables of the chemical and physical properties of the material. All pipe sizes and fittings are illustrated and cross-section drawings show dimensions, assemblies, joining recommendations, etc., to aid design work and ordering.—**National Carbon Co., Inc., 60 E. 42nd Street, New York 17, N. Y.**

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Regardless of the type of projects you handle, Firestone Off-the-Highway Tires will cut your operating costs. Give them a trial and see if your work doesn't speed up while your tire expense goes down.

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Weaver Crane Service, Inc., operates throughout the state of West Virginia, placing and removing underground storage tanks for a nationally-known petroleum company. They are highly pleased with MICHIGAN'S truck mobility and stamina on the mountainous roads of West Virginia. In the words of Mr. Albert Weaver, "it has given exceptionally good service . . . Had this work been done with a less mobile machine, the same trip would have taken at least thirty days . . . I am proud of my MICHIGAN Crane."

This is typical of the praise of MICHIGAN Shovel-Crane owners everywhere. Get all the facts about MICHIGAN — ask for your copy of "MICHIGAN ON THE JOB" which graphically shows the wide range of cost-cutting applications of these pioneer mobile shovel-cranes.

MICHIGAN

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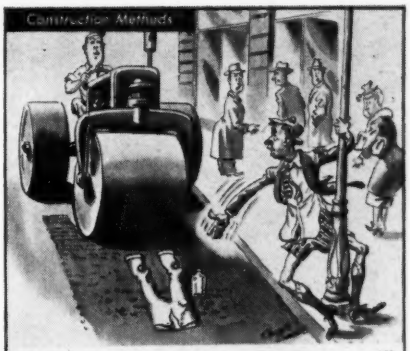


"When you hit th' bottle—STOP—or you'll smash my watch."

FLOW TUBES—This 6-p. folder explains the principle on which flow tubes operate. Curves plotted on cross-sectional and logarithmic charts illustrate the results of calibration tests. It is of interest and value to engineers desiring to improve the measurement or control of fluid flow through a pipe or conduit.—**Bethlehem Foundry and Machine Co., Bethlehem, Pa.**

HEAVY-DUTY ENGINES—An unusually handsome booklet has been issued by this manufacturer to describe its heavy-duty air-cooled engines. Four pages are devoted to explaining how Wisconsin engines are used in construction service.—**Wisconsin Motor Corp., Milwaukee 14, Wis.**

METAL STORM WINDOWS—Fenestra inside metal storm windows for residence casements are discussed in a 2-color, 16-p. folder. It points out how winterized windows save on fuel and make homes more comfortable. Choice of styles in inside storm windows for various casements are illustrated.—**Detroit Steel Products Co., 3159 Griffin St., Detroit 11, Mich.**

VERMICULITE INSULATION—A folder tells of new methods of construction made possible by the development of vermiculite lightweight aggregate. It covers insulating fill, concrete and plaster, and acoustical plastic.—**Zonolite Co., 135 S. LaSalle St., Chicago, Ill.**

LOW HEAT WELDING—An 8-p. bulletin announces latest improvements in low heat welding alloys. It stresses the technically improved welding alloys available for all torch and arc users. Also announced is the new "Cuttrode," in size 3/32 in. for cutting thin sheet metal using no special equipment.—**Eutectic Welding Alloys Corp., 40 Worth St., New York 13, N. Y.**

S STANDS FOR Sterling AND Satisfaction!

The "S" stamped on the back of every Sterling Wheelbarrow symbolizes Sterling quality and satisfaction in barrow transportation. It is our way of letting you know that Sterlings are built from the finest materials by skilled craftsmen.

STERLING WHEELBARROW CO., MILWAUKEE 14, WIS.

Welded tray, all-steel construction with reinforced tubular steel frame, channel steel legs and roller bearing wheel with pneumatic tire. Assures smooth wheeling and perfect balance.

Sterling WHEELBARROWS

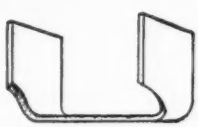
OMAHA DRAGLINE BUCKET

First in the Field!

WITH FEATURES LIKE THESE

HIGHER ARCH

Gives greater clearance for digging and dumping. Carries a bigger load.



CONTINUOUS LIP

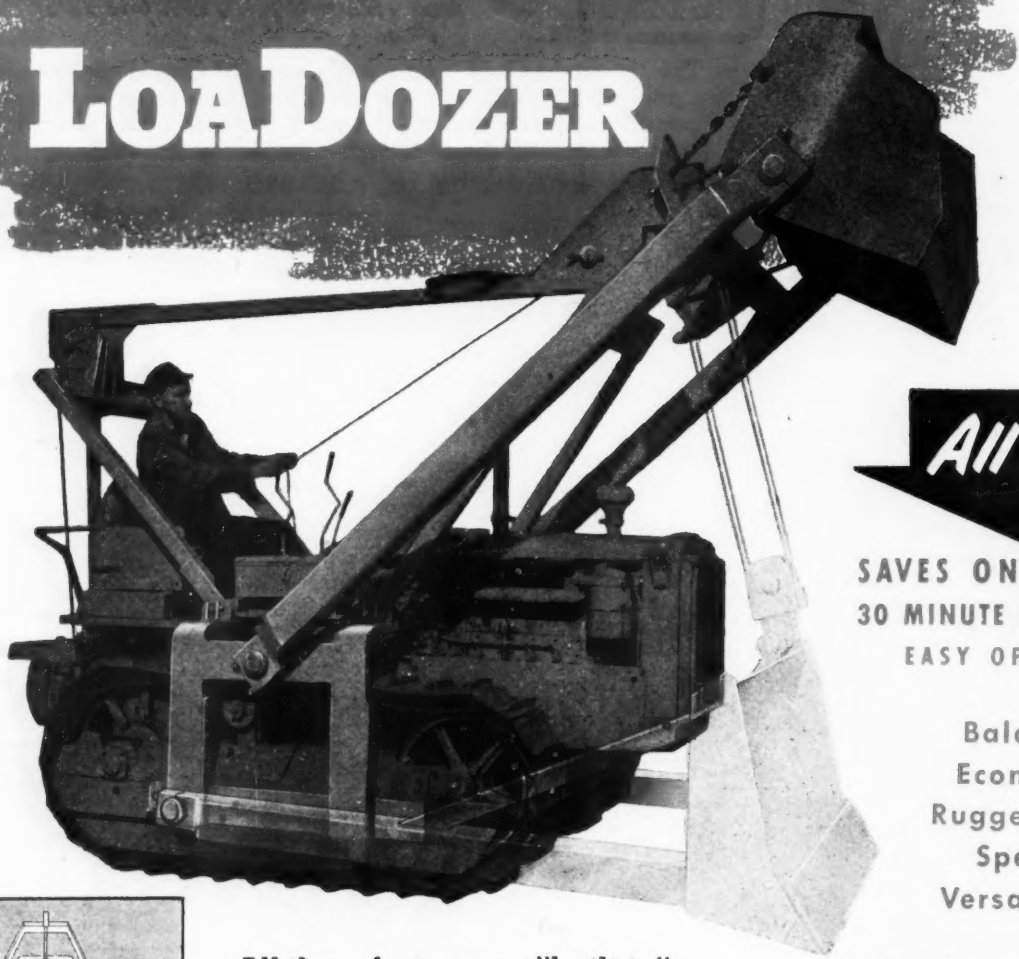
Special tough rolled alloy steel extends to bucket top on both sides. Strengthens the whole front end.

WEDGE SHAPE

Digs easier — dumps cleaner. Fills with a shorter pull—load slides out through the wide arch.

DRAKE-WILLIAMS-MOUNT • OMAHA, NEBR.

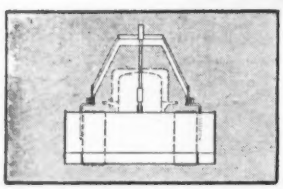
NOW-THE SOUTHWEST LOADOZER

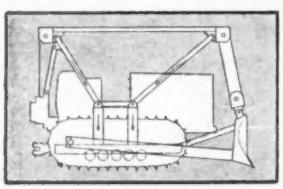


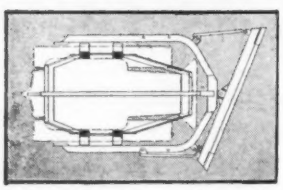
All this

SAVES ONE TRACTOR
30 MINUTE CHANGE-OVER
EASY OPERATION

Balance
Economy
Ruggedness
Speed
Versatility







"Over Center Track Mounted" design gives perfect balance

ANOTHER EXAMPLE OF *Southwest's* LEADERSHIP

All these features are "built-in" qualities of the new SOUTHWEST "LOADOZER"—Extra values that mean greater efficiency and economy in Loader and Bulldozer operations. Remember—you SAVE ONE TRACTOR—it takes only 30 MINUTES TO CHANGE OVER this combination Loader-Bulldozer unit.

- Built for all four makes of track type tractors.
- See your equipment dealer about the complete line of SOUTHWEST CONSTRUCTION EQUIPMENT.
- For complete specifications on this Loader-Bulldozer combination unit—WRITE FOR BULLETIN CM-11.

CONSTRUCTION MACHINERY DIVISION

Southwest Welding & Manufacturing Co.

ALHAMBRA, CALIFORNIA

This feature alone can pay for

The BELL Prime Mover
In a single season the Prime Mover's sturdy blade saves enough on equipment and labor to pay for itself . . . keeps walks and drives free from snow . . . clears away sand, cinders, and other debris.

★ PATENTS & T.M. REG. PENDING. COPYRIGHT, 1948

FEATURES:

- takes half-ton loads up 20% grades.
- bucket holds 10 cubic feet...18 with sideboards.
- gear driven . . . no belts or chains.
- clutch, engine, transmission all run in oil.
- fully enclosed engine protected against dirt and moisture.
- half-ton platform body available; also 50-inch "baby bulldozer" blade.
- switch from bucket to platform without tools...in less than a minute.
- turns in its own length (63½"); width only 31½".
- 3-gallon tankful of fuel gives 8 hours continuous service.

A PRODUCT OF

BELL *Aircraft* CORPORATION

● You don't need costly tractors and expensive labor gangs to clear away snow this winter. A Bell Prime Mover, with its 50-inch blade, can do the job for far less cost. And that isn't all...

When snow plowing is done, the Bell Prime Mover can be readied for other jobs in just a few minutes. With its big bucket, it becomes a *GIANT wheelbarrow.* With its steel platform, it becomes a *half-ton utility truck.* It pays *extra* dividends on scores of year-'round applications.

A nationwide network of distributors and service depots is available for demonstration of the Bell Prime Mover on such jobs as pouring concrete; moving packaged goods and supplies in warehouses and loading platforms; plowing snow or sand . . . doing any light scraping or grading.

For detailed information and the name of a nearby distributor, please mail the coupon . . . today.

BELL AIRCRAFT CORPORATION
Post Office Box 1C-11, Buffalo 5, N.Y.

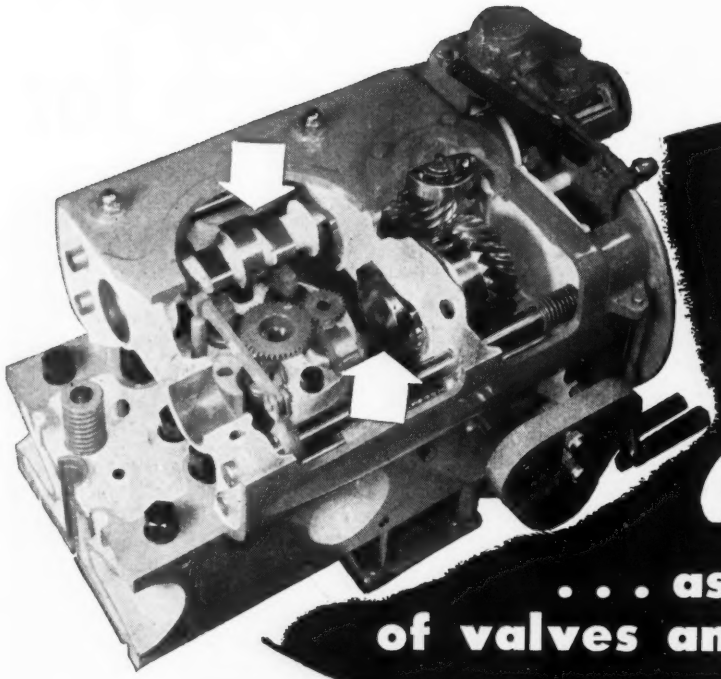
Please send me complete data on the Bell Prime Mover . . . and the name of nearest distributor.

Name .....

Company .....

Address .....

City, Zone, and State .....



DUAL OVERHEAD CAMSHAFTS

. . . assure precise control of valves and fuel injection!

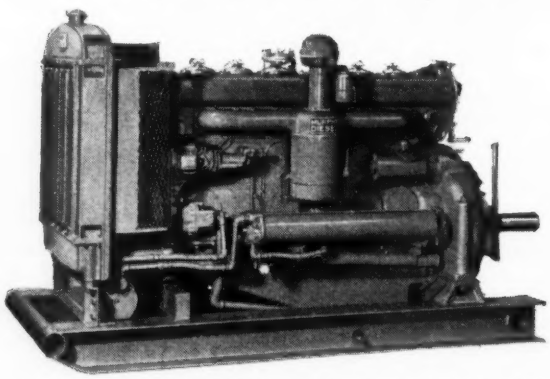
The MURPHY DIESEL has dual overhead camshafts...

By using two overhead camshafts in place of a single shaft mounted in the crankcase, Murphy Diesels employ a short, direct drive to the valves and injectors. Consequently more accurate timing can be maintained which means a higher degree of operating efficiency and greater power output. Further, dual camshafts offer more wearing surface. Load, as compared with a single camshaft, is considerably reduced. This means less wear, less frequent adjustment and longer life.

Such additional features as "true" diesel operation, unit fuel injection, four valves per cylinder, flywheel end cam drive and the hydraulic servo-type governor offer further assurance of maximum economy and dependability. Get full details, today. Ask your Murphy Diesel Dealer for a copy of the booklet *"7 Questions to Ask a Diesel Engine Salesman"* or write to:

MURPHY DIESEL COMPANY
5339 West Burnham St., Milwaukee 14, Wisconsin

This model ME-6 Murphy Diesel rated at 135 H.P. continuous, 160 H.P. intermittent, powers a pump drawing 1750 gallons of water per minute from a 410 ft. well. Water lift to surface is 180 ft.



Murphy Heavy Duty "True" Diesel Engines and Power Units 90 to 215 H.P.
Generator Sets 60 to 115 K.W., A.C. or D.C.

MURPHY DIESEL

LOWEST ULTIMATE POWER COST

MOTOR GRADER FILM—A new, 16-mm. full-color, sound moving picture, "Adams All-Purpose Motor Graders," has recently been completed. The movie shows motor graders at work on a wide variety of road construction, road maintenance, and miscellaneous grading jobs. It also shows the new rotary snow plow at work on a motor grader as well as "V"-type plow and wing snow removal work. The film can be seen by contacting any Adams distributor.—**J. D. Adams Mfg. Co., Indianapolis, Inc.**

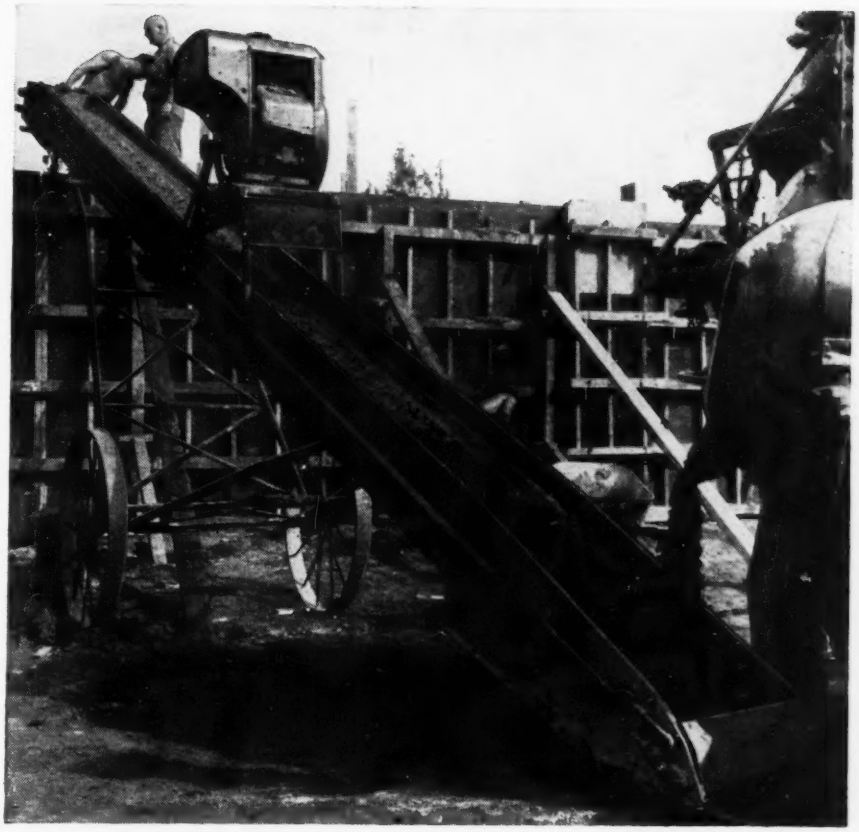
SINGLE CONTROL VALVE—A new publication describes the Hydromatic single control valve, now standard equipment on Cochrane Zeolite softeners and pressure filters. With this valve all the normal functions of a valve nest are integrated and controlled by a single valve.—**Cochrane Corp., 17th St. & Allegheny Ave., Philadelphia 32, Pa.**

AWNING WINDOWS—A little illustrated folder answers ten questions frequently asked about awning windows, which are said to offer better ventilation and circulation because the tilted sash deflects air currents upward and keeps the air at the ceiling moving, without need for fans or other circulation equipment. — **Gate City Sash & Door Co., Ft. Lauderdale, Fla.**

BOTTOM DECK FEED—A 3-color, 12-p. booklet explains the bottom deck feed of Pioneer Continuflo gravel plants which increases plant output by providing twice the pay screening area and continuous balance of the crushing loads between the primary and secondary crushing stages. There is independent screening of pit run and crusher run material on the same screen.—**Pioneer Engineering Works, 1515 Central Ave., Minneapolis 13, Minn.**

ANTI-CORROSION — About 200 standard products for corrosive and high temperature service are listed in a new catalog. Among the standard specialties described are balls, floats, nails, bolts, pipe and pipe fittings, gaskets, valves, wire rope and vibration isolators.—**The International Nickel Co., Inc., 67 Wall St., New York, N. Y.**

VARIABLE SPEED MOTORS—(16-p. bulletin) Presentation of new model U.S. Varidrive motors is made in a fact-filled bulletin. Varidrive, which enables a machine operator to obtain infinite speeds, is shown in natural colors in different capacities. —**U. S. Electrical Motors, Inc., 200 E. Slauson Ave., Los Angeles 54, Calif.**



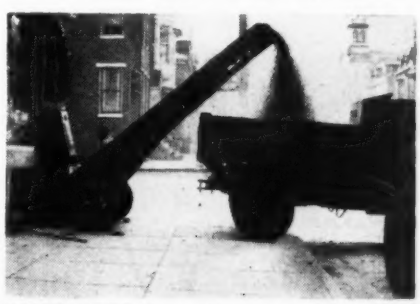
Farquhar Trough Conveyor "PAYS FOR ITSELF"

handling wet concrete from mixer to forms

ON one job alone, handling wet concrete from mixer to forms, this Farquhar Trough Conveyor — Model 343 — more than *paid for itself* in time and labor saved. No hoist operator was needed; scaffolding was eliminated on this construction project . . . the Farquhar Conveyor fed concrete to the forms at the rate of one cubic yard a minute—faster than the contractor believed was possible.

For All Handling Jobs

General-utility Farquhar Trough Conveyors handle sharp or abrasive materials, fine or powdery materials, small bags or bundles *faster, better, cheaper* than old-fashioned handling methods. Contractors, chemical plants, coal yards, warehouses—all industries turn to Farquhar for the right answers to specific handling problems. Farquhar offers a complete line of conveyors for portable, semi-permanent or permanent use, handling all kinds of loose or packaged materials. Tell us your problem—we have the know-how to help you. Write A. B. Farquhar Co., Conveyor Division, 232 Duke St., York Pa., or 622-A W. Elm St., Chicago 10, Ill.



MOVING DIRT *from basement excavation direct to dump truck with gas engine-driven Farquhar 334-T Conveyor saves time for contractor . . . hard, back-breaking work for men.*

Farquhar PORTABLE OR PERMANENT MATERIALS HANDLING CONVEYORS

A. B. FARQUHAR COMPANY · CONVEYOR DIVISION

HYDRAULIC PRESSES
FARM EQUIPMENT
FOOD PROCESSING AND
SPECIAL MACHINERY

Preformed . . .
THE NEW STANDARD
Those who use preformed wire rope do so because of its exceptional performance. Those who don't use it, should use it if only to make a comparison.
Those who use it know that
● it lasts longer
● is easier to install
● is safer to use
● and costs less to use

Steer Without Stopping

with OSGOOD Air Control

Smooth, effortless steering—without stopping the forward motion of the machine—with the cab in any position—that's OSGOOD Air-Controlled Steering! Independent air cylinders, actuated by a small lever in the cab, disengage and set steering brakes on the driving sprockets instantly, eliminating the need to hunt for a point where a steering lock can be engaged.

OSGOOD Air Control means faster, safer operation . . . more work done in less time, with less effort. Plan now to choose an OSGOOD. A complete line of power shovels, draglines, cranes, clamshells, backhoes and pile drivers . . . a model for every type of work.

POWER SHOVELS • CRANES • DRAGLINES • CLAMSHELLS • BACKHOES • PILE DRIVERS

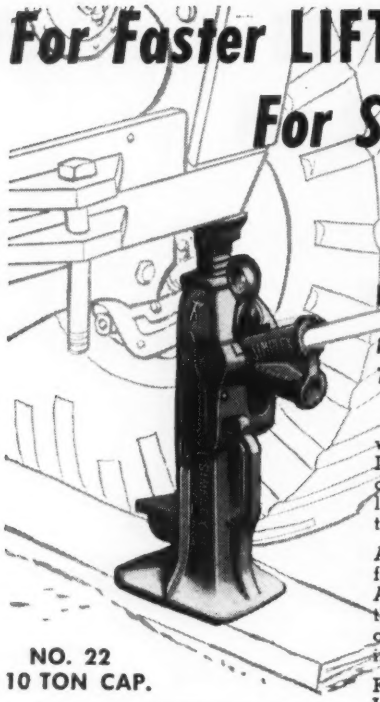
THE OSGOOD CO. O-G THE GENERAL CO.
EXCAVATOR

MARION OHIO

DIESEL, GASOLINE OR ELECTRIC POWERED • ⅜ TO 2½ CU. YD. • CRAWLERS & MOBILCRANES

For Faster LIFTING
For Safer LOWERING
SIMPLEX
RATCHET LOWERING JACKS

For Contractors, Bridge and Road Builders, Truckers, Operators of Heavy Equipment



NO. 22
10 TON CAP.

Use these single acting jacks for safe, sure work in lifting, lowering, pushing or pulling. Double lever sockets speed work in cramped quarters and in angular lifting. All models will lift full capacity on the toe or on the cap—a feature that only Simplex can give you.

Available in 10 models with capacities ranging from 5 to 35 tons, and lift from 7 to 18 inches. All have two-way standard lever socket except three largest models; these are available with any of three types of sockets. Delivered with lever included.

For full information, write for Bulletin: Industrial 48.

SIMPLEX HYDRAULIC JACKS

Available in eight models to handle from 3 to 100 tons — tested to 100% overload. Write for Bulletin HJ-47.

Simplex
LEVER - SCREW - HYDRAULIC
Jacks

TEMPLETON, KENLY & CO.
1008 South Central Avenue, Chicago 44, Illinois

GET TWICE THE LIFE WITH
CAINE
CORR-PLATE
STEEL PILING!

1. STANDARD

2. INTERLOCKING

Now Caine Corr-Plate Steel can be ordered in a new steel alloy which gives it 100% greater corrosion resistance. This practically doubles the service life of your piling. Tests also prove this new alloy to be 25% stronger, giving you equal strength in a 25% lighter piling.

Caine Corr-Plate Steel Piling can be used over and over again, thus distributing its cost over a great many jobs. It's nestable, easy to drive, and watertight.

The world over, Caine Corr-Plate Steel Piling is being used for Foundations, Dams, Retaining Walls, Docks, Levees, Bulkheads, Sewers, Disposal Plants and hundreds of other jobs.

Now, More Than Ever Before...
***STRONGEST** Per Pound Weight*

2894

CAINE STEEL COMPANY
Steel Piling Division, 1820 N. Central Avenue, Chicago 39, Illinois

AIR TOOLS—A circular on air tools makes the point that drilling through stone, brick and concrete walls or digging hard ground is a long hard job with hand tools, and it urges the use of air power for excavating, drilling, laying concrete, breaking up rock and masonry, paint spraying and many other jobs.—**Ingersoll-Rand, 11 Broadway, New York, N. Y.**

CORROSION CONTROL—Use of "Micromet" in controlling corrosion, preventing lime scale and stopping "red water" discoloration in water systems is described.—**Calgon, Inc., Pittsburgh, Pa.**

TRACK-TYPE TRACTOR—A 2-color, 32-p. booklet presents the specifications of the "Caterpillar" diesel D6 track-type tractor along with manufacturing and engineering features and views of typical jobs handled by the D6 tractor.—**Caterpillar Tractor Co., Peoria 8, Ill.**

ALUMINUM ALLOYS—A new aluminum alloys and mill products data book is a 162-p. volume which contains information as to alloys, tempers, sizes, shapes, physical, chemical properties, and fabricating characteristics. Besides 163 tables of data there are 33 pages of explanatory text covering a wide range of related subjects. Wrought aluminum mill products and methods of producing them are described. A section on surface finishes for aluminum is also included, covering mechanical, chemical, electrolytic oxide, electroplate and organic finishes. Prepared by Harlan D. Jones and other technical service men, the book sells for a dollar a copy but is free to engineers, designers and technicians who ask for it on their company letterhead.—**Reynolds Metals Co., 2500 S. Third St., Louisville 1, Ky.**

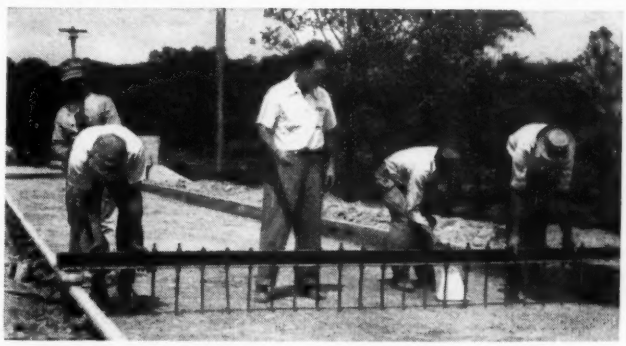
GATE VALVES—(12-p. circular). New circular, No. 534, presents a new line of "Union bonded" bronze gate valves, 200 lb. S.P.; 400 lb. W.O.G. Literature illustrates the advanced design of these new valves characterized by the first application of full cylindrical body sections to bronze gate valves.—**The Lunkenheimer Co., Cincinnati 14, Ohio.**

WROUGHT-IRON SLING CHAINS—New 4-p. bulletin SC-48 includes sling chain safety rules and full data on chain inspection, use and care. Recommended load limits are listed in detail for various chain sizes and suspension angles. Single and double sling chain specifications are presented in tabular form.—**Cleveland Chain & Mfg. Co., Cleveland 5, Ohio.**

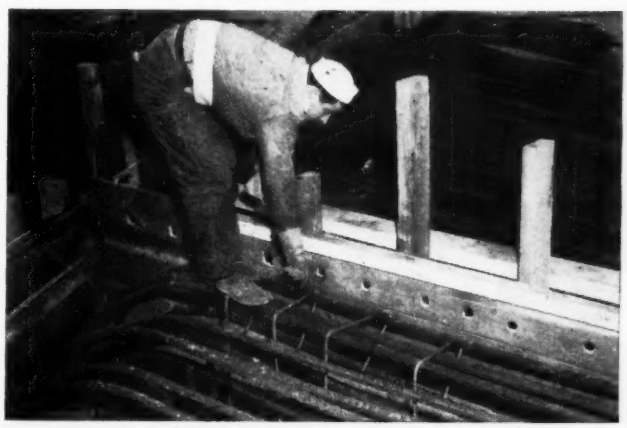
Looking south. Old road made sharp turn at bottom of hill, before crossing narrow bridge (left). New road at right will be straight as a die.

Eliminating Dangerous Curve on U.S. Route 1

View of project looking north. New construction under way at left.



Preparatory to first pour, workmen use scratchboard to test subgrade for depth.



Close-up of Bethlehem Reinforcing Bars, 291 tons of which were used in new bridge.

Henry Acchione (left) of Acchione Contracting Co., discusses bridge specifications with (left to right): Charles A. Burn, resident engineer, Pa. Dept. of Highways, partner Daniel Acchione, and Richard Allen, senior construction inspector, Pa. Dept. of Highways.

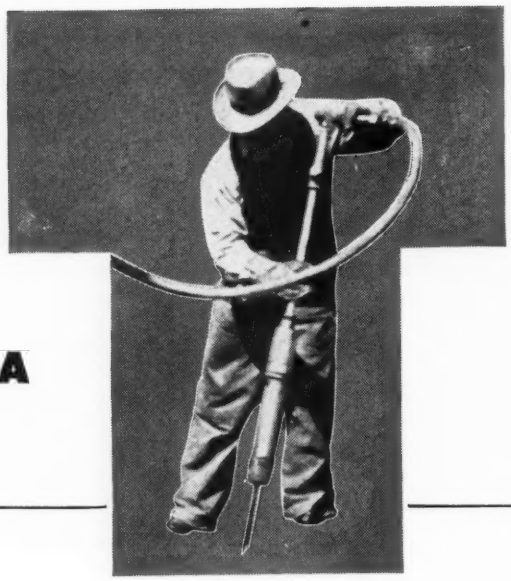
The combination of a steep hill, sharp turn, and narrow bridge had long brought trouble to motorists using U. S. Route 1 at Ridley Creek, Media, Pa. To eliminate this traffic hazard, the Pennsylvania Department of Highways recently undertook some 3240 ft of 4-lane relocation, including construction of a 152-ft bridge. Acchione Contracting Co., Philadelphia, had the contract. Bar mats, dowel units and bridge reinforcing were furnished by Bethlehem.

BETHLEHEM STEEL COMPANY, BETHLEHEM, PA.

On the Pacific Coast Bethlehem products are sold by Bethlehem Pacific Coast Steel Corporation
Export Distributor: Bethlehem Steel Export Corporation

STEEL FOR HIGHWAYS

Dowel Units • Reinforcing Bars • Guard Rail Posts
Bar Mats • Guard Rail • Wire Rope and Strand
Hollow Drill Steel • Spikes • Bolts and Nuts • Pipe
Sheet and H-Piling • Fabricated Structural Steel
Timber Bridge Hardware • Tie-Rods



SUITED TO A

WITH A T23

OPERATORS

Operators like the popular Gardner-Denver T23 Backfill Tamper because it reduces handling fatigue. They find it balanced for smooth holding . . . for easy "walking" over the fill.

CONTRACTORS

They do their jobs *faster* with a T23! Dependable—the valve and exhaust will not "freeze" in cold, damp weather. Economical—air consumption is remarkably low.

MAINTENANCE MEN

The T23 suits them, too! For the two items of tamper maintenance—piston rod packing and method of butt attachment—are conveniently arranged for quick and easy access.

Other Features Are:

INTEGRAL OIL RESERVOIR—*assures complete lubrication. Feeds only when tamper is in operation.*

LOW LIFT END SEATING TYPE VALVE—*sustains efficiency of piston action over longer period.*

SPECIALLY BURNISHED CYLINDER BORE—*highly wear resistant.*

DOUBLE TAPER LOCKING FEATURE—*holds tamping butt securely on piston rod against all shock and vibration—yet can be quickly removed when necessary.*

For complete information, write Gardner-Denver Company, Quincy, Illinois.

GARDNER-DENVER SINCE 1859

MOTOR GRADER—A 24-p. catalog on Galion's new extra heavy-duty motor grader is now ready. Standard equipment includes manual steering with hydraulic booster, same size tires front and rear, and electric starter. With its increased weight, 100-hp. diesel engine, all-gear tandem drive, full hydraulic control, and six 14:00x24 tires, this grader is claimed to offer the utmost in tractive effort, blade pressure, ease of handling and versatility of blading operations.—**Galion Iron Works & Mfg. Co., Galion, Ohio.**

PLUMBING AND DRAINAGE—A new 80-p. Wade catalog of sealed air chambers, grease interceptors and drainage and plumbing specialties has three unique features: Selector tables for determining roof leader sizes; tabulated information on the correction of destructive fluid pressure surges, commonly called "water hammer"; and scientific tables for the correct sizing of grease interceptors.—**Wade Mfg. Co., Elgin, Ill.**

BALL BEARINGS—In a catalog on miniature ball bearings eight pages are devoted to comprehensive specifications on more than 40 types and sizes of standard miniature ball bearings.—**Miniature Precision Bearings, Inc., Keene, N. H.**

NEW INDUSTRIAL DRILLS—A 2-color circular features the new Fairchild ¼-in. drill and the Hi-Power ½-in. model. It is said that the latter is the first industrial type ½-in. drill to sell for under $30.—**Precision Equipment Co., 2658 N. Long Avenue, Chicago 39, Ill.**

STUD WELDING PROCESS — A poster-type broadside describes the many construction applications and cost-saving advantages of the stud welding process of end welding stud-like fasteners to steel surfaces in such work as roofing and siding, sprinkler and piping systems, conduit and wireways, rigid insulation, furring or nailing strips, and heavy decking and planking.—**Nelson Stud Welding, Division of Morton Gregory Corp., Toledo Ave., and E. 28th St., Lorain, Ohio.**

CONSTRUCTION PUMPS—A 12-p. bulletin lists 17 different series of self-priming centrifugal pumps and 3 series of diaphragm pumps especially designed for construction work. Among the self-priming centrifugals described is the newest Marlow "Water Wizard" pump for contractors, the Series 430, 40M, 4-in. suction and discharge.—**Marlow Pumps, Ridgewood, N. J.**

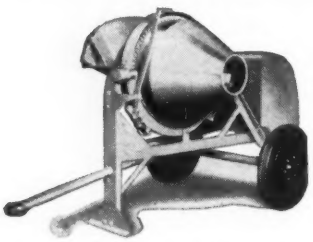
W.T.Q.
SPELLS
SECURITY!
FOR OVER 35 YEARS
THE THORO SYSTEM
HAS BEEN SOLVING
WATER PROBLEMS
WITH MASONRY—
WATERPLUG
to stop the leaks
THOROSEAL
fills and seals
surface
QUICKSEAL
for beautiful
finish
Never before has the masonry business been so big, and never before have the problems accompanying it been so great.
Today, when masonry starts sweating or springs a running leak, The THORO System products are brought on the job to immediately correct the situation. In 35 years, these products have been gaining a nationally-known name.
No wonder the old-time contractor will always specify this time-proven way of correcting masonry problems. It's the only sure way!! Order through your builder and contractors supply dealers.
The THORO System
WRITE NOW!
Get our 16 page brochure, pictorially describing, in detail, "How To Do It," it's yours for the asking. No. 142
Standard Dry Wall Products
BOX X. NEW EAGLE. PENNA.

. . . from little fellow to big brother, SMITHS are GOOD MIXERS . . .

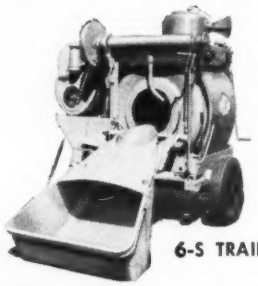
Everywhere you go . . . in both the social world and business world . . . good mixers are popular.

For almost a half century, the name SMITH has been popularly associated with Good Mixers. From the small 3½-S Mascot to the big 112-S Tilter, the World's Largest Concrete Mixer, Smith Mixers rate "TOPS" in the industry. They are popular with contractors because they produce big yardage concrete on a fast, efficient production basis. They are specified by engineers because of their uniform mix and absolute dependability.

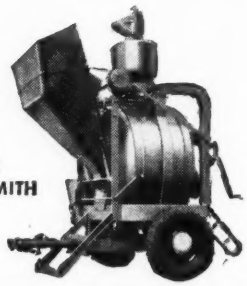
Yes sir — Smith Mixers have been around a long time. Ask any of the users who have associated with them throughout these many years. Invariably, they will tell you ". . . from little fellow to big brother, SMITHS are GOOD MIXERS"!



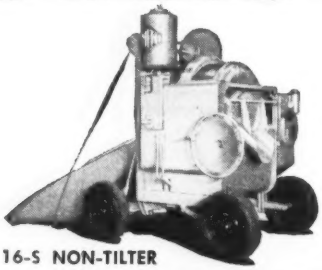
3½-S MASCOT



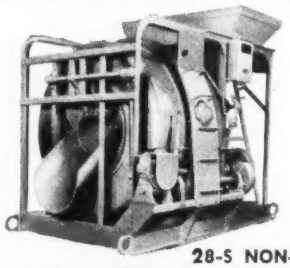
6-S TRAIL-SMITH



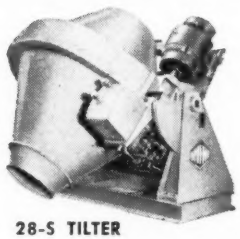
11-S
TRAIL-SMITH



16-S NON-TILTER

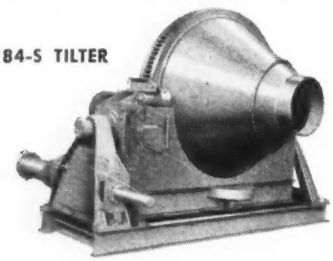


28-S NON-TILTER

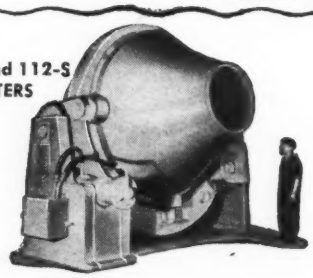


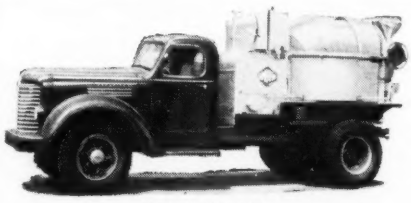
28-S TILTER

84-S TILTER



56-S and 112-S
TILTERS





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AVOIDING TRUCK ACCIDENTS—A new industrial data sheet on the safe use of trucks has been prepared. It covers the particular phases of truck operation that create the major accident problems and outlines safe procedures to reduce hazards. It warns drivers, repairmen and workers about the dangers in unexpected movements of trucks, in the loading and unloading of materials and in getting on and off vehicles.—**National Safety Council, 20 N. Wacker Drive, Chicago 6, Ill.**

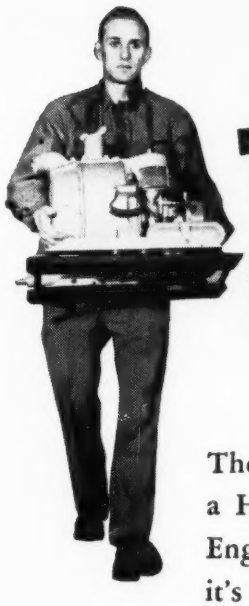
GRAVEL PLANT—A 12-p. booklet explains principle of bottom deck feed as applied to duplex crushing and screening plants for gravel.—**Pioneer Engineering Works, 1515 Central Ave., Minneapolis 13, Minn.**

JOINT SEALING COMPOUND—A 6-p. folder gives information about a hot-poured thermoplastic rubber asphalt joint sealing compound for concrete pavements which is widely used in airport and highway work.—**Industrial Products Division, The Flintkote Co., 30 Rockefeller Plaza, New York City, N. Y.**

LETTERING GUIDES — The "Wricoprint" lettering guides, one of the many features in this catalog, provide an inexpensive means by which anyone, without skill or previous experience, can do perfect uniform lettering, easily and quickly.—**The Wood-Regan Instrument Co., Inc., Nutley, N. J.**

STRONG GRIPS—An unusual and interesting folder describes and illustrates a wide variety of grips and material handling devices produced by this manufacturer, including three new items developed at the request of the Naval Aeronautics Division. The mere listing of some of the company's chief items indicates the scope of its offerings in the construction field. These include trip hook, package cradle, adjustable box grab, and the following—drum, barrel, box, plate, tong, screw type, and binder grips. With the latter any amount of slack can be taken up without loosening any of that which has already been passed through the master grip.—**Smith Devices, 331 N. 4th St., Philadelphia, Pa.**

POWER ROOF VENTILATOR—An automatic power roof ventilator is described in a circular. In Verti-Stocks butterfly dampers open wide the instant the fan is started and the air is exhausted straight upward blowing foul air, smoke, fumes or dust high above the roof.—**Oliver & McClellan, 30 Church St., New York 7, N. Y.**



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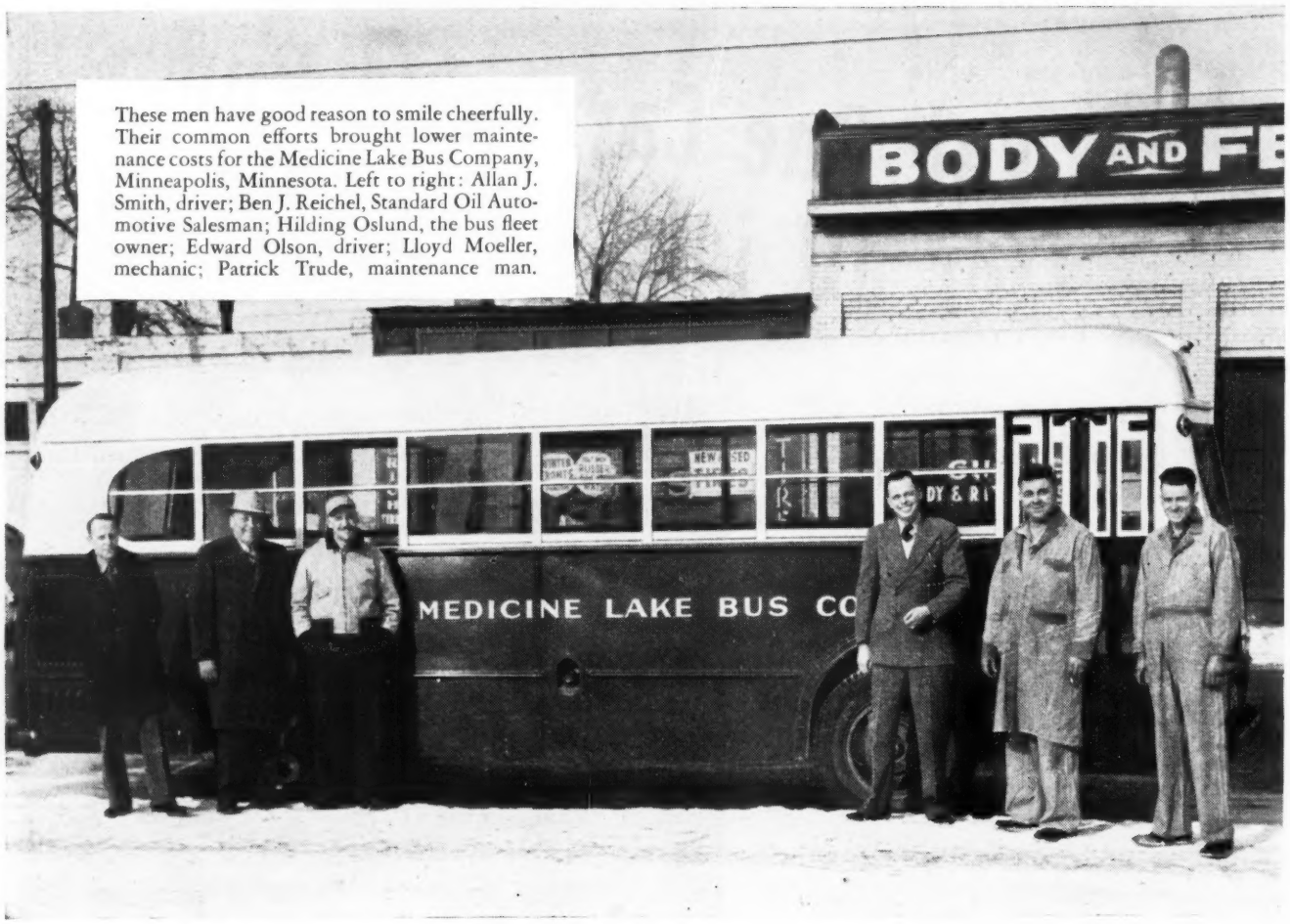

These men have good reason to smile cheerfully. Their common efforts brought lower maintenance costs for the Medicine Lake Bus Company, Minneapolis, Minnesota. Left to right: Allan J. Smith, driver; Ben J. Reichel, Standard Oil Automotive Salesman; Hilding Oslund, the bus fleet owner; Edward Olson, driver; Lloyd Moeller, mechanic; Patrick Trude, maintenance man.

Start-stop service and overload cause little trouble, now, with . . .

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The Medicine Lake Bus Company, Minneapolis, Minnesota, is faced by two major operating problems: (1) a high ratio of bus starts and stops per mile, (2) heavy passenger loadings, amounting to 100% overload during peak hours. This severe service materially affects engine life.

Seeking to drive down maintenance costs, this fleet's management tried various conventional and heavy duty lubricants. Oil performance was closely observed. On the basis of the results, one lubricant was chosen over all others —Stanolube HD Motor Oil.

Mr. H. O. Oslund, the owner, writes: "In our experience, we found that engine life was materially extended. Such problems as dirty engines, ring sticking, bearing failure, and premature valve failures have been eliminated. In our opinion, 'Stanolube HD' has solved our lubrication problems."

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If you are located in the Midwest, write Standard Oil Company (Indiana), 910 South Michigan Avenue, Chicago 80, Illinois, for the services of the Standard Oil Automotive Engineer nearest you.

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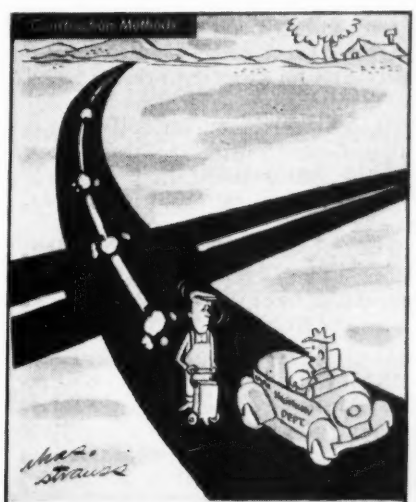
INDUSTRIAL WATER TREATMENT—Booklet describing industrial water treatment problems and modern methods of solving them is now available. Booklet, of particular interest to plant engineers and managers and executives, is printed in two colors and illustrated with photographs and charts. Text covers industrial water treatment from simple, basic theory for the layman to specific problems involved in the use of water for power, process and cooling.—**The Bird-Archer Co., 400 Madison Ave., New York 17, N. Y.**

SMALL TOOLS—A new 28-p. catalog presents a line of micrometers, vernier calipers, height gages and other machinists' tools. — **George Scherr Co., 200 Lafayette St., New York 12, N. Y.**

HOISTING MACHINERY — 20-p. catalog illustrates and describes a large number of hoisting items and equipment including electric, gasoline and diesel hoists, gear and chain-driven hoists, electric capstans and carpullers, boom swinging gears, hoists for special applications, and heavy-duty floating derricks.—**Superior-Lidgerwood-Mundy Corp., Superior, Wis.**

SCAFFOLDING AND LADDERS—A bulletin tells about scaffolding and ladders which the manufacturer calls safe equipment for faster and better work at any height. Only four basic parts are used—standard couplers, bases and tubes. Also described are safety scaffolding machines, swinging scaffolds, sidewalk bridges and ladders.—**The Patent Scaffolding Co., Inc., 3821 Twelfth St., Long Island City 1, N. Y.**



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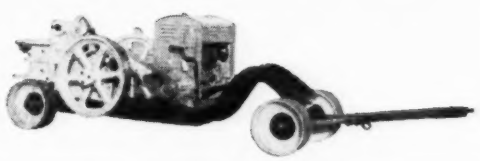

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DIGESTER AND SCUM BREAKER—Design details and specifications are included in an 8-p. bulletin concerning mechanism for scum breaking, sludge concentration and gas collection. Sewage treatment equipment is also listed, together with an interesting discussion of the chemistry of sludge digestion.—**Yeomans Brothers Co., 1445 Dayton Street, Chicago 22, Ill.**

PRICE COMPUTATION—A 64-p. book is a time and labor saver for those in the steel industry who buy from Canadian warehouses or rolling mills in the territory from the Atlantic coast to Kingston, Ont. Tabulated information makes price computation possible in two simple operations.—**Dominion Bridge Co. Ltd., Toronto and Ottawa, Ont., and Montreal, Que.**

SERVICING DIESEL ENGINES—Three new bulletins describe design, performance and facilities for servicing diesel engines. One is a non-technical description of the system of fuel delivery and injection; another describes the application to trucks, shovels, earth movers and other equipment; and the third is a large wall map showing the location of sales service and parts facilities.—**Cummins Engine Co. Inc., Columbus, Ind.**

BATCHING EQUIPMENT—Six bulletins describe a complete line of batching equipment ranging from a 1¼-cu.yd. aggregate type to a 6-cu.yd. combination cement-and-aggregate unit. They are used with bins rated from 30 to 400 tons aggregate capacity and from 100 to 1,500 bbl. cement capacity.—**The Heltzel Steel Form & Iron Co., Warren, Ohio.**

PRESSURE GROUTING—Valuable literature has been issued on pressure grouting methods—fluid, plastic, inert—and on grouting pressures, by the manufacturers of Prehy equipment, which is used for soil stabilization, floor grouting, railroad track stabilization, solidification of fractured rock, restoration of structures, sealing off water, drypack concrete, and cast-in-place piles and pile encasing.—**The Prehy Co., Inc., 420 Lexington Ave., New York 17, N. Y.**

THREE-QUARTER YARD EXCAVATOR — Specifications, technical data and job applications concerning a ¾-yd. excavator are contained in a 16-p. catalog. The job portion of the booklet has some unusually fine photographs.—**The Byers Machine Co., Ravenna, Ohio.**

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says operator George Whiteside of Northern Illinois Coal Corp.

Unretouched photograph of Page AUTOMATIC after 11 months' service.

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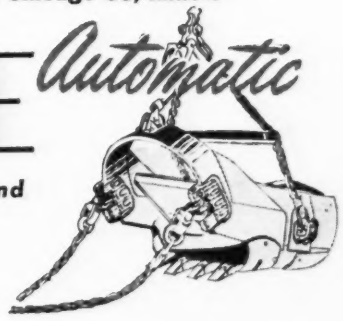

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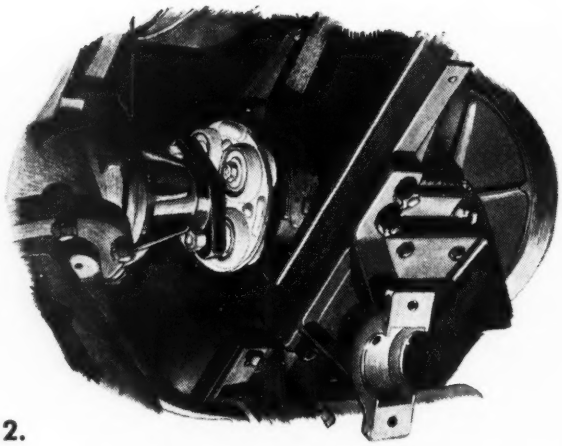

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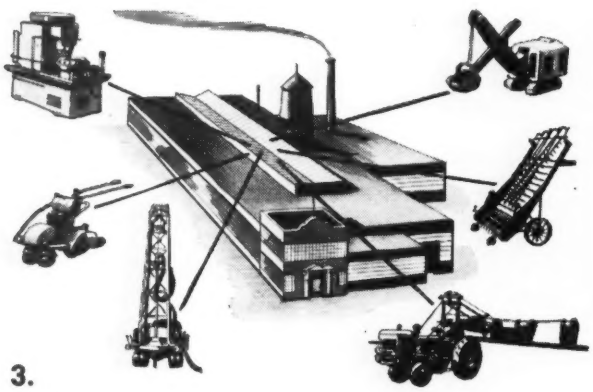

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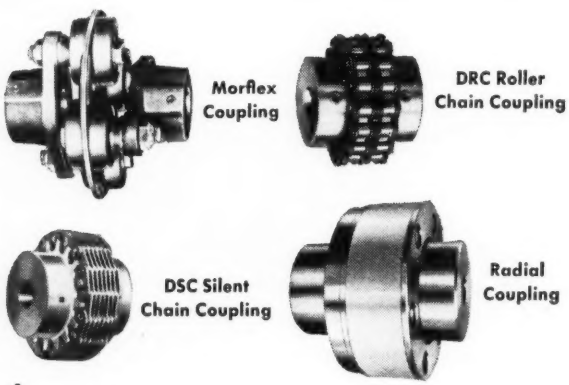

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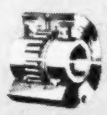

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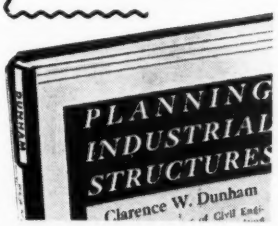

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ZONED EQUIPMENT—The combination of application of tracks and rubber for successful earthmoving is the subject of a recently published booklet of 12 pp. It is indicated that there are these three work zones in this field, viz., clearing, pioneering, heavy dozing and pusher-rod-loader; slow speed hauling over rough terrain; and high average haul and return speeds where good roads for long hauls are encountered. This company has also just issued an interesting booklet on "The Power that Moves the Earth."—**Caterpillar Tractor Co., Peoria 8, Ill.**

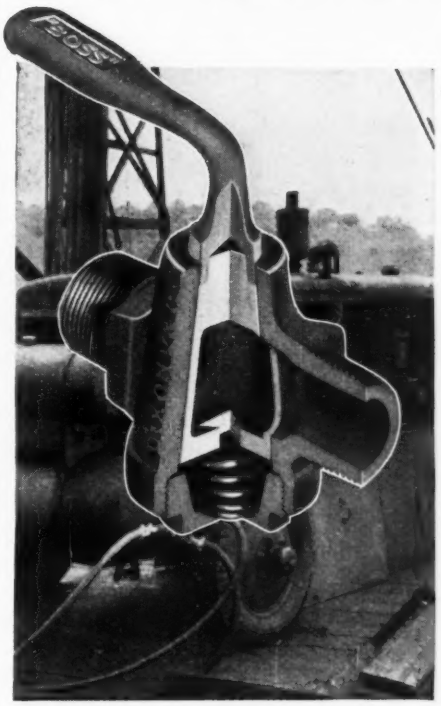
STEEL BUILDINGS (6-p. folder) Describes and illustrates uses and advantages of standard Armco Steelox buildings. Includes general data showing range of sizes, types of doors and windows, partitions, ceilings, louvres, and ridge ventilators. Illustrations show how wall panels, roof panels, and top plates are assembled in field.—**Armco Drainage & Metal Products, Inc., Middletown, Ohio.**

PAVER CATALOG — Single and double drum pavers with automatic control are described in this catalog. Other developments described and illustrated are: fast loading skip, boom, blading, discharge chute; water control, faster cycle, lowest yardage cost; streamlining for better protection of working parts and maximum accessibility to working parts, details of the crawlers, the advantages of the chain drum drive; the ruggedness of the frame; the reliable power transmission. Complete dimensions and specifications are included.—**Chain Belt Co., 1600 W. Bruce St., Milwaukee 4, Wis.**

TREATED WOOD—(150-p. loose-leaf book) Revised manual of standards for treated wood condensed to essential details. Standards are grouped for easy reference under such heads as Preservatives, Treatments, Methods of Analysis, and Recommended Practices. Designed to be helpful to specification writers, design engineers and architects, railroad purchasing agents, contractors, builders, and those concerned with heavy or residential construction.—**American Wood Preserves Association, 1427 Eye St., N.W. Washington 5, D. C.**

PORTABLE POWER TOOLS—New catalog describes full line of Syntron power tools including portable electric hammers, gasoline hammer paving breakers, external concrete form vibrators, internal flexible shaft concrete vibrators, and portable electric drills, grinders, sanders and accessories.—**Syntron Co., Homer City, Pa.**

"BOSS" *Self-Honing* AIR VALVES



FIRST *in Efficiency, Safety, Economy!*

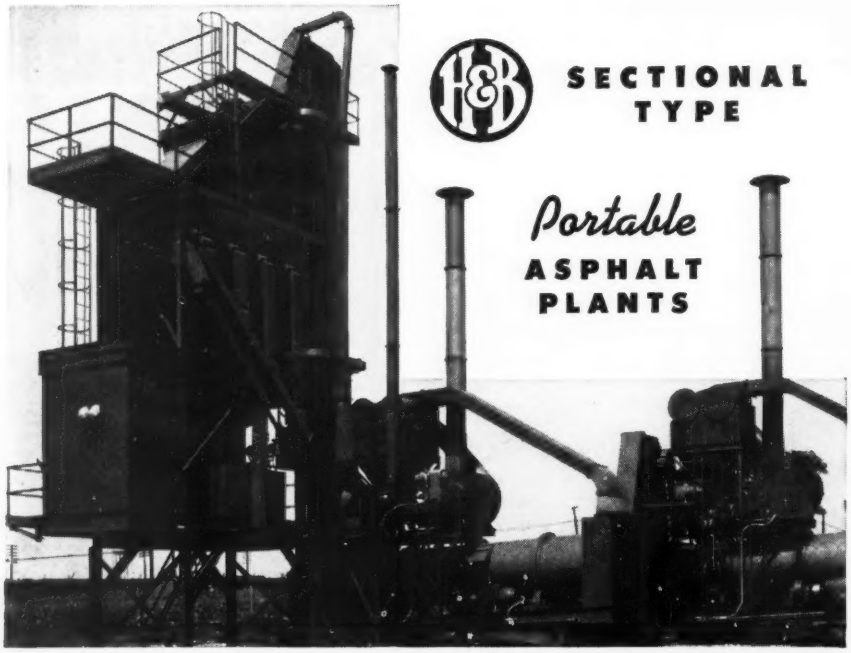
Built to withstand the roughest service in heavy construction, roadbuilding, mining, quarrying; on compressors, pipe lines, hose lines. *Self-honing* provides a permanent, leakproof seal. Handle and plug combined within the valve body—*handle can't come off.* Valves are quick-opening, self-adjusting, and do not require packing. Straight, full flow in open position assures maximum capacity. Male or female both ends, sizes ½" to 2". Cadmium plated—rustproof.

Stocked by Manufacturers and Jobbers of Mechanical Rubber Goods.

IF IT'S A DIXON PRODUCT

IT'S DEPENDABLE

DIXON
VALVE & COUPLING CO.
Main Office and Factory: PHILADELPHIA, PA.
BRANCHES: CHICAGO · BIRMINGHAM · LOS ANGELES · HOUSTON



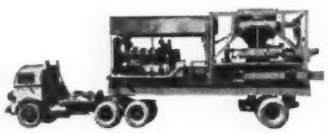
SECTIONAL TYPE

Portable
ASPHALT PLANTS

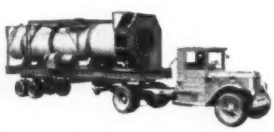
For Dependable, Uniform and Economical Production

PA PLANTS ARE EASILY PORTABLE BY TRUCK

All-electric mixer and weighing unit, with control house, mounted on tandem axle.



Diesel-electric-driven mixer and weighing unit with Diesel generator set mounted on main frame.



Same axle may be used to haul dryer unit as is used to carry mixer unit.

● First to build the sectional type asphalt plant, Hetherington & Berner, Inc., has always striven to build machinery which would give uniformly dependable production over a period of years. The record of H & B plants under all kinds of operating conditions is the best answer as to how well we have succeeded.

H & B sectional type plants are built in two general models: Model PE electrically-driven plants, recommended primarily for contractors who do not ordinarily move more than once or twice a season; Model PA plants, designed primarily for the contractor who moves frequently and who must be able to get efficient production on small as well as large jobs, and under a wide variety of operating conditions.

HETHERINGTON & BERNER, INC.
735 Kentucky Ave. • Indianapolis 7, Ind.

Bulletin P-46, describing both PE and PA plants, will be sent on request.

THE H & B MOTO-PAVER

The complete traveling mixer and paver. A self-contained single unit machine which accomplishes the entire mixing and laying job in one continuous operation. *Write for Bulletin MP-47.*

EARTHMOVING FILMS—"Euclids Move the Earth," a new full 16-mm. sound film covering Euclid's complete line of off-the-highway earthmoving equipment has been released. It is an on-the-job movie of the various applications of earthmoving equipment in metallic and non-metallic strip mines . . . highway and railroad projects . . . airports . . . dams . . . levees . . . and other large construction programs. Bottom-dump, rear-dump, and side-dump hauling units and the Euclid Loader are shown on scores of various jobs throughout the country dealing with the hauling problems and solutions peculiar to each type of job. This 30-min. presentation is now available. Direct requests to Euclid representatives or distributors or directly to the Sales Development Department of the home office. This company has also just issued three new pieces of literature concerning off-the-highway earthmoving equipment—bottom-dump, rear-dump with 10-speed transmission and 16.00x24 drive tires. **—The Euclid Road Machinery Co., 1361 Chardon Road, Cleveland 17, Ohio.**

EXPANSION JOINT FILLERS — A circular tells of means to counteract the destructive forces of expansion in concrete structures due to temperature changes. It is a preformed bituminous expansion joint which consists of 75 to 80 percent pure blown petroleum asphalt held together in a tough, shock-resistant mass with a fiber binder, further supported by two surface layers of saturated felt paper, giving it added strength and rigidity for handling.— **W. R. Meadows, Inc., Elgin, Ill.**

TURBINE PUMP—A new turbine pump for small diameter deep wells capable of developing water capacities up to 5,000 gal. per hr. from depths as great as 200 ft. has been announced. The Peerless Champion is an open line shaft pump. Bowl and shaft bearings are lubricated by the well's own water. No oil is used underground. Semi-open impellers, streamlined porcelain—enameled bowl sections, and rubber bearings all contribute to smooth water lifting with minimum losses due to turbulence. All shafting is stainless steel.**—Peerless Pump Dvision, Food Machinery and Chemical Corp., 301 West Avenue 26, Los Angeles 31, Calif.**

CONCRETE FLOORS—A 6-p. illustrated folder tells how concrete and terrazzo floors may be insured against wear, deterioration and dusting by treating them economically with a patented liquid concrete hardener called "Lapidolith."**—Building Products Division, L. Sonneborn Sons, Inc., New York 16, New York.**

Steam

WHERE AND WHEN YOU NEED IT

EXPRESSLY DESIGNED FOR CONSTRUCTION OPERATIONS

NEW • PORTABLE • PACKAGED

CLEAVER-BROOKS STEAM GENERATORS

80 H.P. — 125 H.P. — 150 P.S.I.

- Fast Steaming
- 80% Efficiency
- Low Cost Operation
- Light-Weight
- Skid Mounting for Truck or Trailer
- Low Fire Start
- Modulating Control of fuel oil — assures constant steam pressure
- Electric Ignition
- Burn any Fuel Oil up to No. 3
- Self-Contained Fuel Tanks
- Full Weather Protection
- Factory Finished and Tested
- Choice of Gas or Electric Motor

Here's what you have been looking for — completely packaged units — portable — and suitable for a wide range of construction work such as — asphalt plant, storage and tank car heating, aggregate heating, ready or hot mix plants, pile driving, and winter concrete work for both hot water and steam for curing.

Available in 80 HP and 125 HP — 150 PSI. (For permanent installation a capacity range of 15 to 500 HP is available in other Cleaver-Brooks packaged steam generators.) Clean, smokeless and require no ash disposal. Provide the easiest fuel handling. Complete safety protection — a four-pass boiler designed in accordance with A.S.M.E. code; inspected and approved by Hartford Steam Boiler Inspection and Insurance Company.

Send today for illustrated catalog on the new Cleaver-Brooks Model LFM Steam Generators.

CLEAVER-BROOKS COMPANY, 387 E. Keefe Ave., Milwaukee 12, Wis.

Cleaver-Brooks

PACKAGED GENERATOR

TANK CAR HEATERS • BITUMINOUS BOOSTERS

Charlie said—"Yes!"...

Twice!!

When a quarry operator orders a second plant from the same manufacturer, you can be sure the first plant paid out well.

So, when Charlie Langford of Gallatin, Tennessee ordered his second PIONEER Quarry Plant, we were mighty pleased. He's been in the quarry business for over 29 years and knows what equipment produces more material at the lowest cost per ton.

Saying "yes" a second time is becoming more and more of a habit with men who own and operate PIONEER equipment. We're proud of our "Repeat Orders" because they are proof that sound engineering, good design and a few PIONEER "extras" are *producing more for less.*

Take Charlie's second PIONEER plant located at Cookeville, Tennessee. In seven months it produced over 250,000 tons of road aggregate and ag-lime—maintenance was less than $250.00 . . . less than 1/10c per ton.

For complete details about PIONEER Quarry Equipment, or for the address of your closest "PIONEER neighbor" who'll give you first hand facts—write us today.

PIONEER ENGINEERING WORKS
1515 CENTRAL AVENUE • MINNEAPOLIS 13, MINNESOTA

Ask Charlie Langford about his 3′ x 10′ and 3′ x 6′ Triple Deck Vibrating Screens arranged in tandem. He'll tell you that this positive-throw, inclined screen can't be beat for clean, efficient separation of materials.

Since C. A. Langford's first Pioneer plant went into production at Gallatin, Tennessee. Production has exceeded 250,000 tons of road aggregate and ag-lime in a single year.

BUY BOTH!

Higher Output, Lower Upkeep!

Pioneer

Continuflo **EQUIPMENT**

EQUIPMENT MEN

and Their Companies

Current developments among manufacturers relating to expansion of services, shifts in personnel, and other changes, include the following:

SALES—Richard E. Hoagland has been appointed manager of by-products sales of the **Kaiser Co. Inc.,** with office at 756 South Spring St., Los Angeles 14, Calif. . . . **Alvin W. Hicks** is sales manager in the St. Louis, Mo., office of **Marquette Cement Mfg. Co.** in the Shell Bldg. His territory is Missouri, southern Illinois and southern Indiana. . . . **Ralph Lesseig** is district sales representative for **McCullough Tool Co.** in the Rocky Mountain district with headquarters at Casper, Wyo. . . . **Gordon V. Millichamp** is manager of the New York sales branch of the **Pennsylvania Rubber Co.** . . . **Robert A. Jackson,** structural engineer, is district sales manager for the **Chicago Bridge & Iron Co.** at Seattle, Wash. . . . **Arthur W. Pugsley** has joined the executive staff of the **Trundle Engineering Co.,** Cleveland, Ohio, as vice-president and sales manager. . . . **Patrick G. Train** is sales manager for the **Architectural Porcelain Constructors** at 2827 Union St., Oakland, Calif. . . . **W. H. Starbuck** is assistant general sales manager of the Kellogg division of the **American Brake Shoe Co.** at Rochester, N. Y. . . . **Jack R. Gregson** is district sales manager of the **Wellman Engineering Co.** in the eastern territory with offices at No. 2612 Graybar Bldg., 420 Lexington Ave., New York, N. Y. . . . **Robinson F. Barker** is assistant manager of plate glass sales for **Pittsburgh Plate Glass Co.** . . . **Thomas A. Cantrell** is district manager for western New York and Ontario and Quebec for **The Euclid Road Machinery Co.** . . . **John H. Poulson** has been appointed regional sales supervisor in the eastern district for **Eutectic Welding Alloys Corp.,** makers and distributors of low heat gas and arc-welding rods and fluxes. . . . **W. J. Carney** has been appointed sales manager of the engineered fabrication division of the **Edward Hines Lumber Co.,** at 2431 South Wolcott Ave., Chicago, Ill. . . . **C. P. Corrigan** has been appointed district sales manager for the Cleveland, Ohio, area, of the Ramapo Ajax division of the **American Brake Shoe Co.** . . . **Roy S. Rankin,** former vice-president and director of sales of **Harris Calorific Sales, Inc.,** Detroit, Mich., has become manager of the **Progressive Welder Sales Co.** of Michigan, Maccabees Bldg., Detroit.

(Continued on page 168)

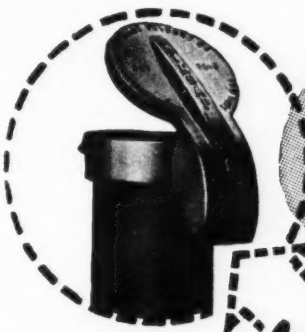
IT'S DIFFERENT!

it's a SWING Loader

Plenty of "crowd" power—raises load easily, and *swings* to dumping position. No jockeying of tractor or truck. Saves Time!

Mounts on International Tractors—Sold Through International Dealers (or write to Dept. CM-11).

SUPERIOR EQUIPMENT COMPANY
BUCYRUS, OHIO



RAINCAP

New!

STOPS MOISTURE FROM FALLING INTO TRACTOR EXHAUST

No.	O.D. Exhaust	Retail
1	2⅛"	$1.90
2	2⅜"	1.90
3	2⅝"	1.90
5	1⅞"	1.90
55	2"	1.90
5x	1⅝"	1.90
6	1½"	1.90
66	1⅜"	1.90
7	2½"	1.90
8	3"	2.80
9	3⅛"	2.50
10	3¼"	2.50
11	3½"	2.75
115	3¾"	3.00
12	4"	3.00
123	4⅛"	3.00
126	4⅛"	3.00
14	4½"	3.00

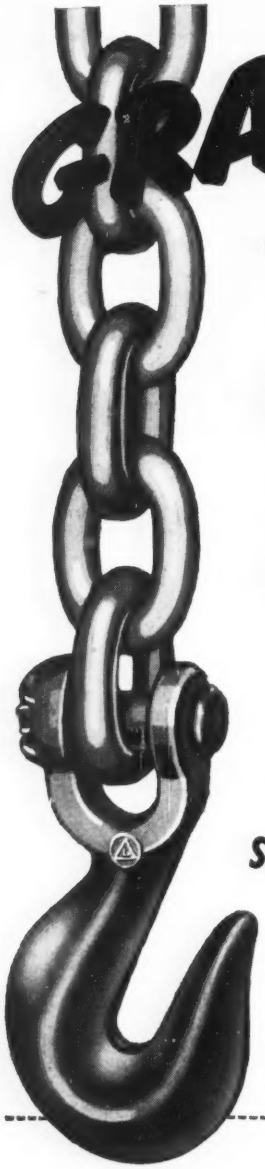
THE CAP THAT DOES NOT FORGET TO CLOSE

Completely automatic—the "RAINCAP" is counterbalanced to open when the tractor starts and close when it stops. Rust proof—made of cast aluminum—with bronze bushing—can be installed in two minutes. F.O.B. Waterloo, Iowa.

- Immediate delivery
- Liberal Dealer Discount.

Write Dept. CM.

WATERLOO FOUNDRY CO., WATERLOO, IOWA



GRAB ...THIS NEW CLEVIS GRAB HOOK *for Speed, Safety, Simplicity*

Here's a new one—a rugged, heat-treated, forged hook with a jaw that's quickly attached to any chain.

Slip the pin through the clevis; Spread the cotter

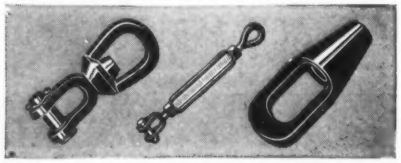
. . . and you've made a better, stronger connecuion in nothing flat. Supersafe, too—forged housing protects workers from projecting cotter pin.

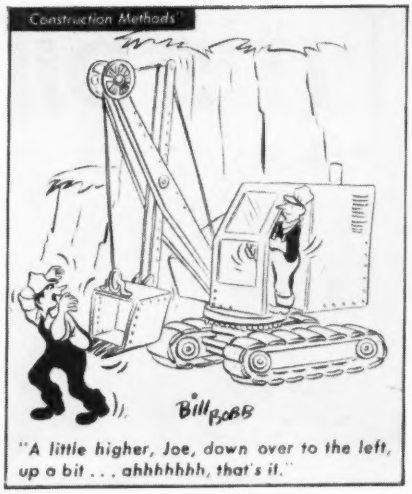
Laughlin Clevis Grab Hooks do away with shackling . . . cold-shutting . . . cutting, bending and rewelding the chain. Easily changed from job to job.

Send for information . . . and Laughlin's data book of industrial fittings — Catalog #140. THE THOMAS LAUGHLIN COMPANY, DEPT. 1, PORTLAND 6, MAINE.

LAUGHLIN

THE MOST COMPLETE LINE OF DROP-FORGED WIRE ROPE AND CHAIN FITTINGS





"A little higher, Joe, down over to the left, up a bit . . . ahhhhhh, that's it."

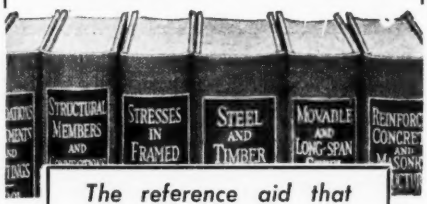
(Continued from page 167)

S. DeVries has been appointed exclusive sales representative for the new Haiss line of material handling equipment in Connecticut for the **George Haiss Mfg Co., Inc.,** of New York. . . . **John F. Flippo,** assistant manager of the Pittsburgh district sales office of the **Atlas Powder Co.,** has been transferred to Chicago as assistant manager of that district sales office. **J. L. Wetzel** succeeds Mr. Flippo at Pittsburgh . . . **R. E. Stiegele** is in the general sales department of the **Hyster Co.,** Portland, Ore., to handle special sales assignments. He is replaced in the southeastern territory by **W. R. Hunt . . . Neal Higgins,** manager of sales, **International Harvester** industrial power division, has announced these assignments: **Jack Bess,** formerly zone manager, industrial power sales at Portland, Ore., industrial power manager, northwest region; **E. L. Boughton,** formerly zone manager, industrial power sales at Boston, Mass., industrial power manager, eastern region; **J. D. Gladden,** formerly zone manager, industrial power sales at Pittsburgh, Pa., industrial power manager, southern region; **W. M. Holland,** formerly manager, supply and inventory, industrial power division, industrial power manager, central region; **I. P. Payne,** formerly manager, Houston, Tex., farm equipment branch, industrial power manager, southwest region; and **D. I. Persons,** formerly manager Spokane branch, industrial power manager, western region.

DISTRIBUTORS—Two new middle western distributors have been announced by **Tracy Mfg. Co.,** Pittsburgh. Pa. They are: **Appliance Distributors, Inc.,** 942 North 24th St., Omaha, Neb., and **Midwest-Timmerman Co.,** Des Moines and Davenport, Iowa. Eastern representatives are **R. U. Lynch, Inc.,** 9 Federal St., Providence, R. I., and **Northeastern Dis-**

(Continued on page 170)

Save time and money on construction jobs



The reference aid that helps you solve your toughest construction problems

With the construction work that lies ahead for every engineer, it is only up to you to assure yourself of superior workmanship—ensure your work of the finest structural qualities—by providing yourself with this revision of the famous Hool and Kinne Library—the books which for years have been providing structural engineers with the facts they need on every problem concerned with the design and construction of civil engineering structures.

HOOL AND KINNE'S

Structural Engineers' Handbook Library

Revised by R. R. ZIPPRODT,

And prepared by a staff of sixty-three well-known engineers, each a specialist in his field.

6 volumes; 3763 pages; 2719 illustrations; 63 contributors

Each one of these six volumes is a complete reference in itself on some aspect of structural engineering. The library

- **COVERS** the how and why of foundation and substructure design and construction, the general theory of structural members, the detailed design of such members and the design of their connection with other members.
- **EXPLAINS** the principles of statics, reactions, moments and shears in beams and trusses, influence lines, methods of computing stresses in lateral trusses and portal bracing.
- **GIVES** details of design and construction of steel, timber and concrete structures of all types.

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We invite you to inspect these books for yourself, because we know that that is the one way you can realize their true value to you, and to the jobs that you do. You want to back up your own knowledge with sure, easy-to-get facts, and you want to make your workmanship worthy of your best time and effort. Therefore, the best investment you can make is to add to your own experience the tested working aids given in this dependable reference library.

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You may send me Hool and Kinne's Structural Engineers' Library for my inspection. If the books prove satisfactory, I will send $4.75 in 10 days and $5.00 per month until I have paid the price of the books, $29.75. If the books are not what I want, I agree to return them postpaid within 10 days of receipt.*

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A mid-summer race against winter with LEHIGH EARLY STRENGTH CEMENT

• To get the 10-unit Astoria Houses project enclosed before winter, a stepped-up schedule for completing concrete floors and structural frames had to be met. A quick-service concrete was essential, so . . . . . the Corbetta Construction Company used Lehigh Early Strength Cement.

The close schedule was maintained. All buildings were enclosed before cold weather, and the interior work is speeding along without interruption. During the 27-day period shown in photographs, 34 floor slabs were poured. Fourteen days later the final slab was placed.

And of special importance . . . . By completing the concrete work in two-thirds of the normal time, the Corbetta Construction Co. saved on overhead alone *almost twice the extra cost* of Lehigh Early Strength Cement.

This is typical of many case histories where Lehigh Early Strength Cement is helping to speed operations and cut costs. Our Service Department will be glad to help you with your specific problems.

LEHIGH PORTLAND CEMENT COMPANY
ALLENTOWN, PA. • CHICAGO, ILL. • SPOKANE, WASH.

Lehigh
CEMENTS

• Astoria Houses, Queens, N. Y., project of New York City Housing Authority. *Contractor Superstructure,* Corbetta Construction Company, Inc.; *Architect,* Harrison, Abramowitz & Wiggins; *Ready Mixed Concrete,* Colonial Sand and Stone Co., Inc.—all of New York City.

• Comparison of upper photographs shows the rapid progress made within a period of 27 days.

LEHIGH PORTLAND CEMENT • LEHIGH EARLY STRENGTH CEMENT • LEHIGH AIR-ENTRAINING CEMENT • LEHIGH MORTAR CEMENT

"INFERNO"

Stronger, Tougher, Safer Than Ever

FOR CONTINUOUS SERVICE UP TO 200 lbs.—400°F.

Since it was first designed, for the earliest steam hose applications, "Inferno" has been improved to meet progressively higher requirements. Today, it represents the ultimate in steam hose construction—a masterpiece of quality craftsmanship insuring unequalled strength, durability and safety.

Flexible steel sinews have been added to the carcass. A tough, red cover provides greater resistance to abrasive wear and all kinds of weather. The tube is made from the most efficient rubber compound ever developed for super-heated steam.

A Goodall "Standard of Quality" product, for pile driving and all other heavy-duty steam jobs, at pressures up to 200 lbs. and superheat steam temperatures to 400° F. Made in sizes ½" to 2", I.D., in maximum lengths of 50 feet.

Contact Our Nearest Branch, or Send for New Illustrated Folder.

GOODALL RUBBER COMPANY

GENERAL OFFICES, MILLS and EXPORT DIVISION, TRENTON, N. J.

Branches: Philadelphia • New York • Boston • Pittsburgh • Chicago • St. Paul • Los Angeles
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Est. 1870

(Continued from page 168)

tributors, Inc., 588 Commonwealth Ave., Boston, Mass. **E. B. White** is representative of **Plasteel Products Co.,** of Washington, Pa., in Kansas City, Mo., and adjacent territory. **The Tyson Bearing Corp.** of Massillon, Ohio, has appointed **R. A. Rodriquez, Inc.,** 55 West 42nd Street, New York City, as export representative, except for Canada.

PERSONALITIES—S. R. Zimmerman, Jr., has been named director of friction material research and development for **Raybestos-Manhattan, Inc.,** at the plants at Stratford, Conn.; Manheim, Pa.; Passaic, N. J., and North Charleston, S. C. . . . **L. A. Dixon** has been appointed vice-president of the meter and valve divisions of the **Rockwell Mfg. Co.,** Pittsburgh, Pa. . . . **Lorenzo Semple,** formerly vice-president of **American Water Works Co., Inc.,** of New York, has been elected vice-president of the **Lustron Corp.,** Columbus, Ohio, which is to start soon producing porcelain enamel steel houses. . . . **Leonard Florsheim** has been named chairman of the board of the **Independent Pneumatic Tool Co.,** Aurora, Ill. . . . **Dallas S. Casley** has been appointed chief engineer of the plant of the Penn Metal Co. Inc., at Parkersburg, W. Va., to assist **George A. Stevenson,** vice-president in charge of operations, in an extensive construction and improvement program. . . . **Gustave R. Geiger** is now supervisor of quality control of the **SKF Industries, Inc.,** main plants at Philadelphia, Pa. . . . **Clarence W. Winchell,** who recently resigned as chief of the Bureau of Standards of New Jersey, has joined the staff of the **U. S. Testing Co., Inc.,** Hoboken, N. J. . . . **W. F. Armstrong** is the new general manager of the Chevrolet Motor Division. He succeeds the late Nicholas Dreystadt . . . **Francis H. Miller,** Fremont, Ohio, former assistant engineer of Sandusky County,

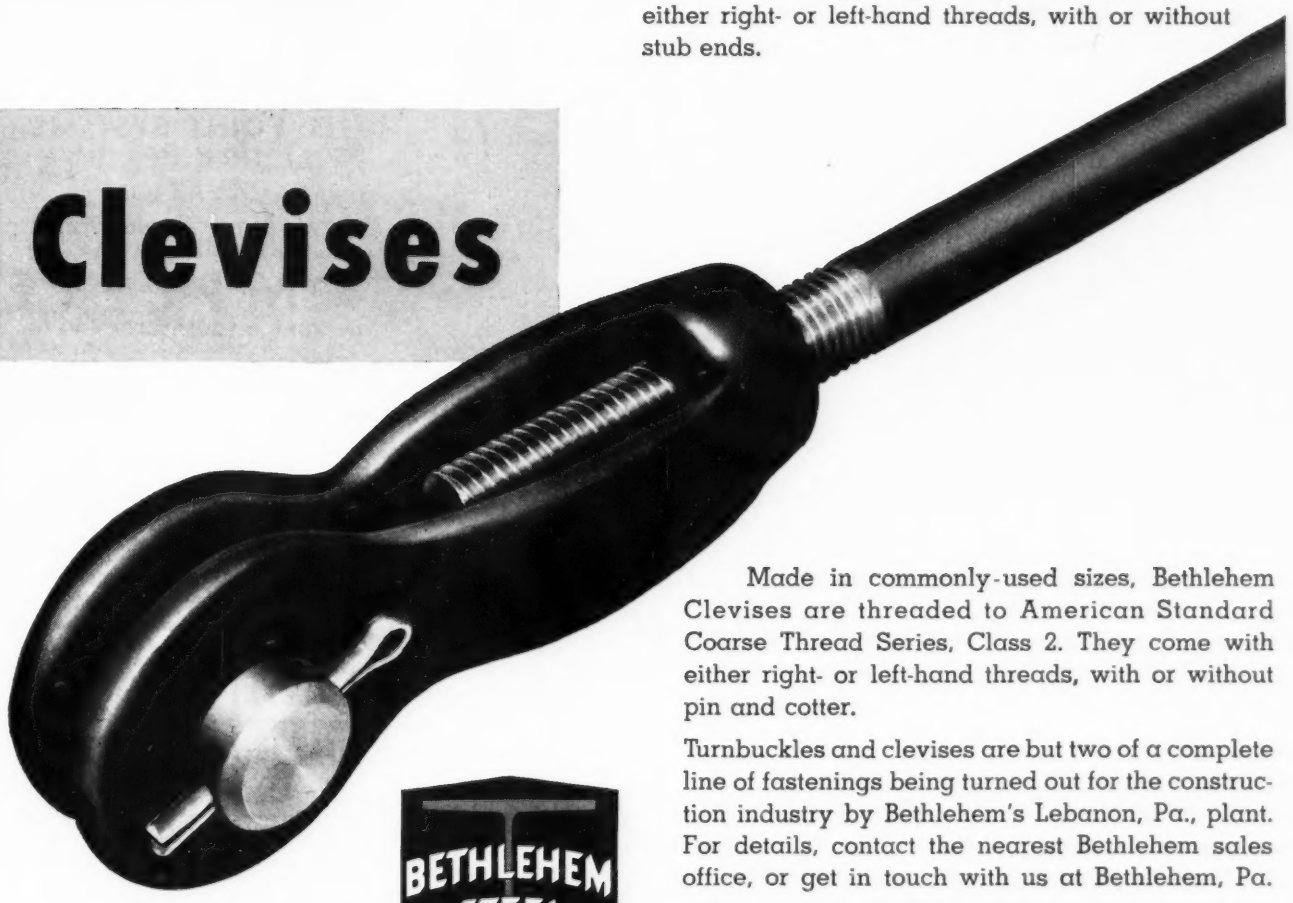
(Continued on page 172)

"Watch out! I understand they're desperate for men."

Turnbuckles

Bethlehem Turnbuckles are manufactured in a wide range of sizes to meet practically every structural requirement. They usually have 6-in. openings between the heads, but also come with 9-in. and 12-in. openings. They are furnished with either right- or left-hand threads, with or without stub ends.

Clevises



Made in commonly-used sizes, Bethlehem Clevises are threaded to American Standard Coarse Thread Series, Class 2. They come with either right- or left-hand threads, with or without pin and cotter.

Turnbuckles and clevises are but two of a complete line of fastenings being turned out for the construction industry by Bethlehem's Lebanon, Pa., plant. For details, contact the nearest Bethlehem sales office, or get in touch with us at Bethlehem, Pa.

BETHLEHEM STEEL

BETHLEHEM STEEL COMPANY, BETHLEHEM, PA.

On the Pacific Coast Bethlehem products are sold by
Bethlehem Pacific Coast Steel Corporation
Export Distributor: Bethlehem Steel Export Corporation

Bethlehem supplies every type of Fastening

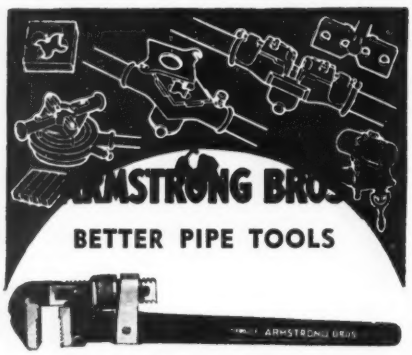
BREAK PAVEMENT
the low cost way!

By Using the
mighty midget

No fatiguing labor. The operator rides and breaks concrete and asphaltic pavement. Tamps trench backfill. Does over five times as much work using only a small air compressor. Write for bulletin and nearest dealer's name.

(MM-3)

R.P.B. CORPORATION
2751 EAST 11th STREET · LOS ANGELES, CALIFORNIA



PIPE WRENCHES

Stronger for size, because handles are drop forged with heavy forged-in lugs to take up side strain. Handier, because there is no cumbersome nut housing, because they are finely balanced tools. See and "feel" this better pipe wrench with its 10 improved features before you buy. Write for Pipe Wrench circular and name of your local "ARMSTRONG BROS." distributor.

Stocked by Leading Tool Departments

ARMSTRONG BROS. TOOL CO.
5234 W. Armstrong Ave., Chicago 30, U.S.A.

Eastern Whse. and Sales: 199 Lafayette St., New York 12, N. Y.
Pacific Whse. and Sales Office: 1275 Mission St., San Francisco 3, Calif.

(Continued from page 170)

has been named field representative for the **Portland Cement Assn.** in 25 central and southern Ohio counties . . . **G. A. Gilbertson,** formerly sales manager of the industrial power division of the International Harvester Co., has become vice-president of the **Frank G. Hough Co.,** Libertyville, Ill., manufacturers of road building and material handling equipment . . . **Paul Brainard** is head of the newly-created Hyster engineering standards department of the **Hyster Co.,** Portland Ore. . . . **John H. R. McDonald,** formerly of Glasgow, Scotland, is now general manager of the Home division, **Knox, Corp., Thomson, Ga.**

MISCELLANY — Masonite Corp. has established five annual competitive college scholarships for children of employes of the hardboard plant at Laurel, Miss. . . . **Metallizing Engineering Co., Inc.,** Long Island City, N. Y., has just celebrated its 50th anniversary. . . . On account of rising manufacturing costs **SKF Industries Inc.** is increasing prices on most of its products, the rise averaging less than ten percent. . . . **J. H. Williams & Co.,** Buffalo, N. Y., maker of drop forgings and drop-forged tools, has opened a warehouse and sales office in Los Angeles, Calif., at 2266 East 38th St. (Vernon). Charles F. Coates is western district manager at that address. . . . **The McClanahan Supply Co.** has been formed in Columbus, Ohio, to distribute in central Ohio a line of specialized truck equipment. . . . In the *Financial World's* annual report survey, for the fourth consecutive year, **Dresser Industries, Inc.,** Cleveland, Ohio, was judged to have had the best appearing 1947 annual report. More than 4,000 corporation annual reports were considered. In the building equipment industry category, **York Corp.,** York, Pa., was runner-up for the honors, and **Minneapolis-Honeywell Regulator Co.,** Minneapolis, Minn., took third place.

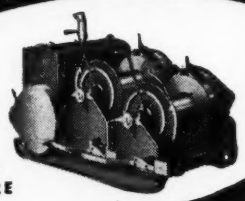
The new address of **Edelen & Beyer Co.,** contractors' and industrial equipment and replacement parts, is 1717 North 54th St., Philadelphia 31, Pa. . . . **Acme Millwork, Inc.,** Seattle, Wash., expanding its production, has bought the former Navy warehouse building at Kirkland, Wash., giving it 50,400 sq. ft. of clear floor space. . . . The **Oliver Corp.** has moved to new offices at 52 Broadway, New York 6, N. Y. This is a district office of the industrial division. . . . Completion of extensive expansion at the Elyria parts division of the **Thew Shovel Co.,** Cleveland, Ohio, has been announced . . . Formation of the **Hamilton-Thomas Corp.,** Hamilton, Ohio, to operate Economy Pumps, Inc., Klipfel Mfg. Co., and Liberty Planers, Inc., is announced.

WHERE TO BUY

Featuring Additional Products, Specialties & Services for the Construction Industry

STERLING HOISTS

STERLING QUALITY



SIMPLE
DEPENDABLE
RUGGED
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WRITE FOR LITERATURE

STERLING MACHINERY CORPORATION
405 Southwest Blvd. Kansas City, Mo.

COMPLETE
WELL POINT SYSTEMS
WILL DRY UP ANY EXCAVATION
Faster—More Economically
Write For Job Estimate and 32 page Catalog
COMPLETE
MACHINERY & EQUIPMENT CO., Inc.
36-36 11th St., Long Island City, N. Y.
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Telephone: Gary 23983

Waterproof with Formula No. 640

A clear liquid which penetrates 1" or more into concrete, brick, stucco, etc., seals—holds 1250 lbs. per sq. ft. hydrostatic pressure. Cuts costs: applies quickly—no mixing—no cleanup—no furring—no membranes. Write for technical data—free sample.

HAYNES PRODUCTS CO., OMAHA 3, NEBR.

ATLAS CONCRETE FORMS

Walls · Cylinders
Floors · Sewers
Irvington
FORM & TANK CORP.
Irvington 45, N. Y.

This
WHERE TO BUY
Section

supplements other advertising in this issue with these additional announcements of products and services essential to official and economical operation in the construction industry.

LINK-BELT SPEEDER *Shovel-Cranes*

K-370—K-375

PRECISION-BUILT, POWER PACKED

TO DO

MORE WORK

Easier, Faster!

A full load, a fast swing and more swings per hour, add up to greater output and more profitable operation.

INDEPENDENT RAPID BOOM HOIST,

permits raising or lowering of boom while travelling, swinging or hoisting, adds to maneuverability and speed of handling.

POSITIVE CHAIN CROWD,

controlled by same wrist-action lever as Rerack unit gives operator one-hand control of crowding and retracting of dipper.

SPEED-O-MATIC HYDRAULIC CONTROLS

eliminate lost motion and back-lash, giving greater speed, abolishing operator fatigue.

•

Let your distributor help you select a Link-Belt Speeder shovel-crane to suit your exact need, from the 25 models, crawler or wheel-mounted, all convertible to every front end attachment.

Excavating, steel erecting, materials handling, (or what have you?) you'll find a Link-Belt Speeder Shovel-Crane will help you do it faster, at lower cost, and at greater profit.

Sound engineering skill results in precision-built machines for trouble-free operation and long life service. For heavy duty, 1¾ yard capacity applications, models K-370 and K-375 combine high capacity, rugged strength with great ease of handling and economical operation.

11.301

LINK-BELT SPEEDER

LINK-BELT SPEEDER CORPORATION,
CEDAR RAPIDS, IOWA

Builders of the Most Complete Line of
SHOVELS-CRANES-DRAGLINES

SEARCHLIGHT SECTION

EMPLOYMENT • BUSINESS • OPPORTUNITIES • EQUIPMENT—USED or RESALE

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$1.20 a line, minimum 4 lines. To figure advance payment count 5 average words as a line.

POSITIONS WANTED (full or part time salaried employment only). ½ above rates.

PROPOSALS, $1.20 an insertion.

INFORMATION:

BOX NUMBERS in care of any of our New York, Chicago or San Francisco offices count 10 words additional in undisplayed ads.

DISCOUNT of 10% if full payment is made in advance for four consecutive insertions of undisplayed ads (not including proposals).

DISPLAYED—RATE PER INCH

The advertising rate is $9.50 per inch for all advertising appearing on other than a contract basis. Contract rates quoted on request.

AN ADVERTISING INCH is measered ⅞ inch vertically on one column, 3 columns—30 inches—to a page.

NEW ADVERTISEMENTS received by 10 A. M. November 29th will appear in the issue of December, subject to limitation of space available.

FOR SALE

FULL VIEW . . . JOB AHEAD WITH SITTING COMFORT

Living room comfort in a chair designed for Power Shovels, Cranes, Tractors, Graders, etc.

All metal . . . can be raised from 19" to 28" by hand lever. Seat moves forward or backward. Chair bolts down tight. Built for government . . . stands hard service.

Now selling at ..... $15 far below the price of production.

WEIL'S
20 South 2nd St.
Phila. 6, Pa.

FOR SALE

1—Scoopmobile, 1947, 3,000 lb. cap., ½ yd. Bucket, 12 ft. track with extensions, lift fork attachment.
1—Pumpcrete, Rex, Single 160, with 436 ft. pipeline. New April 1948, used 3 months, reconditioned and repainted July 1948.
1—Tractor, Caterpillar, RD-4, 7 ft. Blade, rear power control unit, with Adams Hauling Scraper, Model 30, 3-5 yd.
1—Mixer, Concrete, Smith, 14 S with Allis-Chalmers 10 HP, 440-Volt motor.

RENIGER CONSTRUCTION COMPANY
127 N. Cedar Lansing, Mich.
Ph. 57291

FOR SALE

¾ Yard Buckeye Shovel Front. Unused.

T. L. JAMES & CO., INC.
Kenner, Louisiana

BULLDOZER — Subject to Prior Sale

TD18A International—Bucyrus Erie 10 ft. hydraulic blade. Used approximately 100 hours. Condition practically new. Priced to sell. Phone 976W or write

Box 1005, HAMMOND, LOUISIANA

REPLIES (Box No.):
Address to office nearest you.
NEW YORK: 330 W. 42nd St. (18)
CHICAGO: 520 N. Michigan Ave. (11)
SAN FRANCISCO: 68 Post St. (4)

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ENGINEERS: LARGE college offers $3000, approx. half time teaching-studying. All ranks univ. positions, experienced $4500-$6500 nine months. Give phone, photo, qualifications. Cline Teachers Agency, East Lansing, Mich.

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SALES SUPERVISOR—to take complete charge of sales to agents and direct-to-consumer sales of pre-fabricated houses being converted from army cantonments. These homes, selling under $1,000, have vast sales possibilities as evidenced by the tremendous sales from our army camp locations all over the country. The man we want must have experience in building materials or building construction, and should have had training in a supervisory capacity. Must be willing to travel and establish headquarters at army camp site. Our company has been established for more than 35 years. This is a permanent position with great opportunities for the man who can qualify. Salary is open, dependent on your qualifications. Write, stating salary desired and past history. Address SW-6721, Construction Methods.

WANTED

ANYTHING within reason that is wanted in the field served by Construction Methods can be quickly located through bringing it to the attention of thousands of men whose interest is assured because this is the business paper they read.

HAMMERMILL MANUFACTURER SEEKS QUALIFIED SALES REPRESENTATIVE

One of the Country's leading makers of nationally advertised Crushing, Grinding and Pulverizing machinery offers a real opportunity to a qualified sales representative with a successful record in the sale of Crushing or kindred equipment to the non-metallic minerals industry.

Preference to chosen applicant as to location of territory will be given careful consideration. Our sales organization knows of this advertisement. Write fully stating age, experience, remuneration desired, references. All replies will be held in strictest confidence.

RW-6708, CONSTRUCTION METHODS
520 N. Michigan Ave., Chicago 11, Ill.

PROFESSIONAL SERVICES

LANCASTER, ALLWINE & ROMMEL
Registered Patent Attorneys

Patent Practice before U.S. Patent Office, Validity and Infringement Investigations and Opinions. Booklet and form "Evidence of Conception" forwarded upon request.

Suite 417, 815-15th St., N.W., Washington 5, D.C.

LEGAL NOTICE

STATEMENT OF THE OWNERSHIP, MANAGEMENT, CIRCULATION, ETC., REQUIRED BY THE ACT OF CONGRESS OF AUGUST 24, 1912, AS AMENDED BY THE ACTS OF MARCH 3, 1933, AND JULY 2, 1946

Of Construction Methods published monthly at New York, N. Y., for October 1, 1948.

State of New York } ss.
County of New York }

Before me, a Notary Public in and for the State and county aforesaid, personally appeared J. A. Gerardi, who, having been duly sworn according to law, deposes and says that he is the Secretary of the McGraw-Hill Publishing Company, Inc., publishers of Construction Methods, and that the following is, to the best of his knowledge and belief, a true statement of the ownership, management (and if a daily, weekly, semiweekly or triweekly newspaper, the circulation), etc., of the aforesaid publication for the date shown in the above caption, required by the act of August 24, 1912, as amended by the acts of March 3, 1933, and July 2, 1946 (section 537, Postal Laws and Regulations), printed on the reverse of this form, to wit:

1. That the name and address of the publisher, editor, managing editor, and business manager is: Publisher, McGraw-Hill Publishing Company, Inc., 330 West 42nd St., New York 18, N. Y.; Editor, Waldo Bowman, 330 West 42nd St., New York 18, N. Y.; Managing editor, H. W. Richardson, 330 West 42nd St, New York 18, N. Y.; Business manager, H. T. Olsen, 330 West 42nd St., New York 18, N. Y.

2. That the owner is: McGraw-Hill Publishing Company, Inc., 330 West 42nd St., New York 18, N. Y. Stockholders holding 1% or more of stock: Curtis W. McGraw, Executor of the Will of James H. McGraw, 330 West 42nd St., New York 18, N. Y.; James H. McGraw Jr., 330 West 42nd St., New York 18, N. Y.; James H. McGraw, Jr., Curtis W. McGraw and Willard T. Chevalier, Trustees for: Harold W. McGraw, James H. McGraw, Jr., Donald C. McGraw, Curtis W. McGraw, 330 West 42nd St., New York 18, N. Y.; Edwin S. Wilsey and Curtis W. McGraw, Trustees for James H. McGraw, 3rd, Madison, New Jersey, Curtis W. McGraw, 330 West 42nd St., New York 18, N. Y.; Donald C. McGraw, 330 West 42nd St., New York 18, N. Y.; Mildred W. McGraw, Madison, New Jersey; Grace W. Mehren, 536 Arenas St., LaJolla, Calif., Jacob L. Hain, 1 North 5th St., Reading, Pa.

3. That the known bondholders, mortgagees, and other security holders owning or holding 1 percent or more of total amount of bonds, mortgages, or other securities are: none.

4. That the two paragraphs next above, giving the names of the owners, stockholders, and security holders, if any, contain not only the list of stockholders and security holders as they appear upon the books of the company but also, in cases where the stockholder or security holder appears upon the books of the company as trustee or in any other fiduciary relation, the name of the person or corporation for whom such trustee is acting, is given; also that the said two paragraphs contain statements embracing affiant's full knowledge and belief as to the circumstances and conditions under which stockholders and security holders who do not appear upon the books of the company as trustees, hold stock and securities in a capacity other than that of a bona fide owner; and this affiant has no reason to believe that any other person, association, or corporation has any interest direct or indirect in the said stock, bonds, or other securities than as so stated by him.

J. A. GERARDI, Secretary.

McGRAW-HILL PUBLISHING COMPANY, INC.

Sworn to and subscribed before me this 24th day of September 1948.

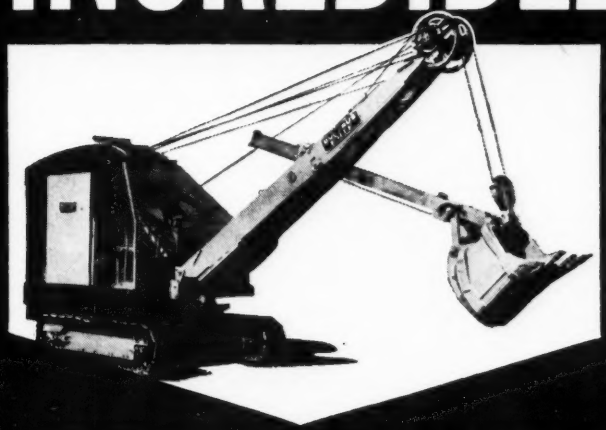
[SEAL] ELVA G. MASLIN
(My Commission expires March 30, 1950)

Don't forget the BOX NUMBER

When answering the classified advertisements in this magazine don't forget to put the box number on your envelope. It is our only means of identifying the advertisement you are answering.

INCREDIBLE BUYS

SAVE UP TO 50%



100 CRANES and SHOVELS

40 TRUCK CRANES!

"AS IS" OR RECONDITIONED . . . MANY NEVER USED!

. . . immediate delivery!

ALSO TRACTORS, GRADERS, COMPRESSORS, DIESEL AND GAS GENERATORS.

CHECK THIS LIST:

Quan.

- 30 BUCYRUS ERIE—½-yd. crawler, Model 15B
- 2 BUCYRUS ERIE—¾-yd. crawler, Model 22B
- 15 BUCKEYE—¾-yd. crawler, Model 70
- 1 GENERAL—½-yd. crawler, Model 307
- 10 KOEHRING—¾-yd. crawler, Model 304
- 1 KOEHRING—1-yd. crawler, Model 376 with Caterpillar D8800 engine
- 1 MARION — 1-yd. crawler, with Caterpillar D8800 engine
- 4 LINK BELT—¾-yd., Models LS 85 and 90
- 1 LORAIN — ¾-yd., Model 40
- 23 LIMA—¾-yd. crawler, Model 34
- 1 NORTHWEST—Crawler, Model 8 with Murphy Diesel
- 2 OSGOOD—½-yd. crawler
- 3 P & H—½-yd. crawler, Model 150A
- 9 P & H—¾-yd. crawler, Model 255A

LOOK 'EM OVER . . .

Quan.

- 6 BAY CITY—15-ton cap., Model 18-S
- 1 BROWNING—15-ton cap., ¾-yd.
- 1 GENERAL—Model 300
- 9 LORAIN—12-ton cap., Model MC
- 23 QUICKWAY—⅜-yd., Model E

ASK ABOUT SPECIAL PRICES AND INFORMATION ON HEAVY DUTY "WHITE" AND "CORBITT" TRUCKS.

DEALERS INQUIRIES INVITED

Wire, write or phone for prices

Schnitzer

STEEL PRODUCTS CO.

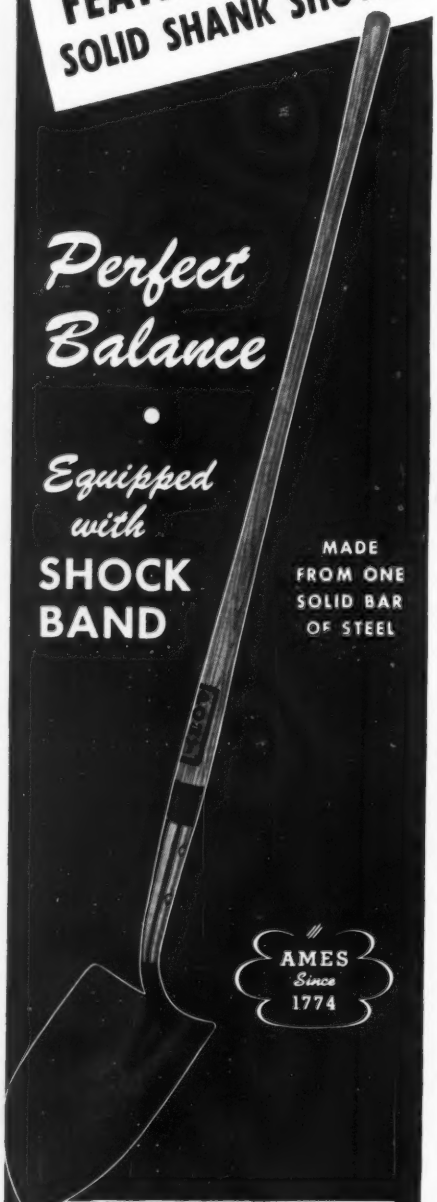
3200 N.W. Yeon Ave., Portland, Oregon
CApitol 1821

Inspection at...
3645 N.W. Front Ave., Portland, Ore.

"AMES"

PONY

FEATHERWEIGHT SOLID SHANK SHOVELS



Perfect Balance

Equipped with SHOCK BAND

MADE FROM ONE SOLID BAR OF STEEL

AMES Since 1774

1 — Blade is forged from solid bar of steel.

2 — "AMES" shock band protects and strengthens handle.

3 — High bend for perfect balance.

4 — Engineered to insure user completely satisfactory results.

AMES BALDWIN WYOMING CO.

Parkersburg, W. Va. North Easton, Mass.

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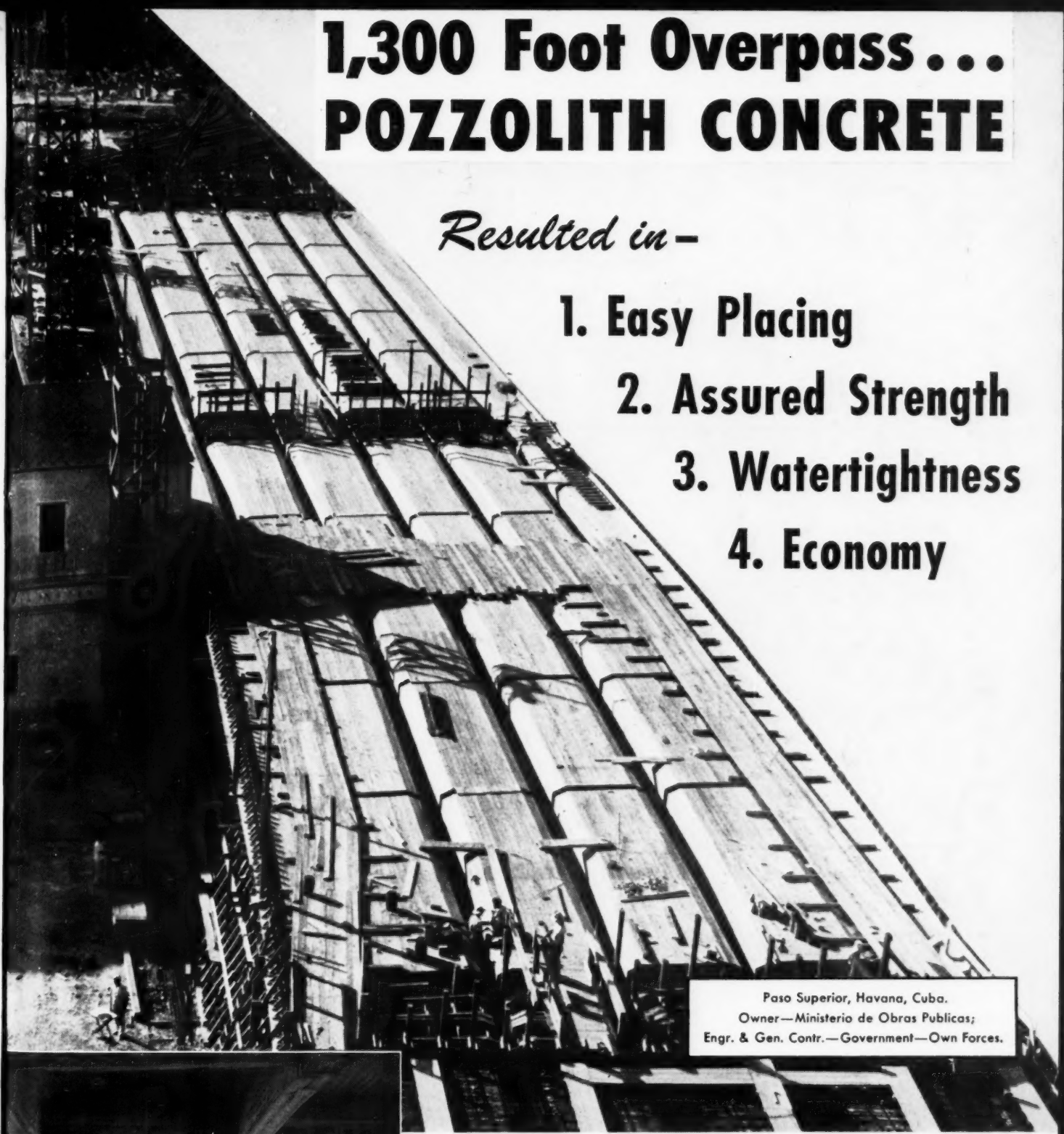
1,300 Foot Overpass... POZZOLITH CONCRETE

Resulted in –

1. Easy Placing
2. Assured Strength
3. Watertightness
4. Economy



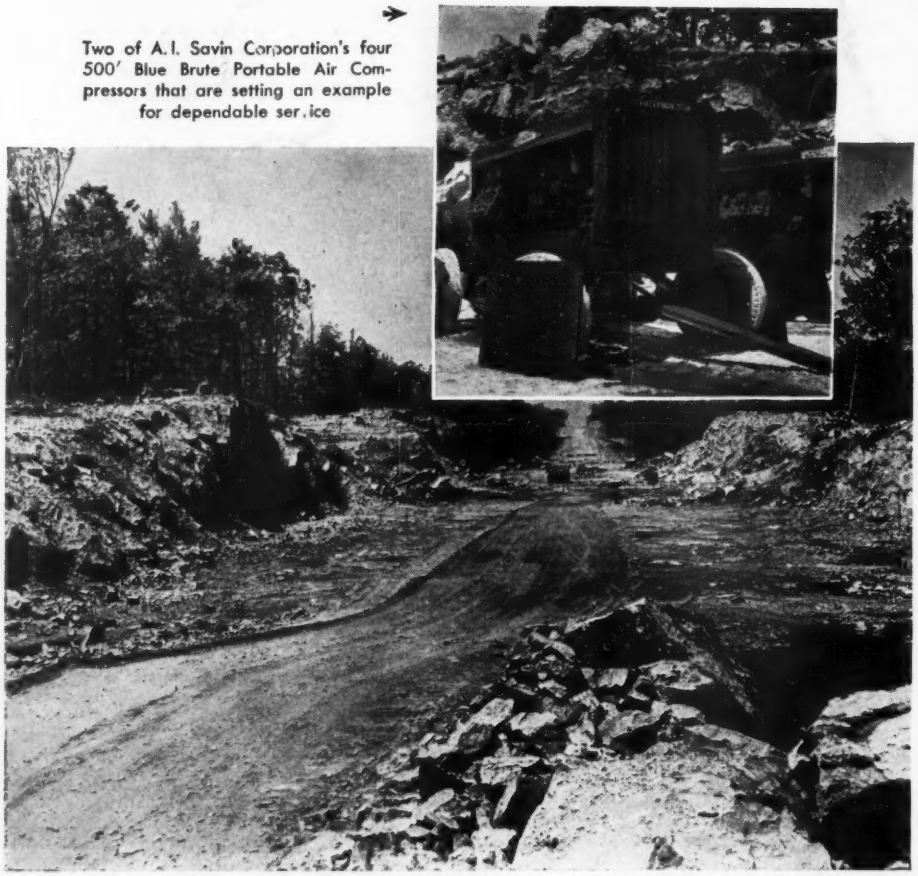
Paso Superior, Havana, Cuba.
Owner—Ministerio de Obras Publicas;
Engr. & Gen. Contr.—Government—Own Forces.

Here's another important project built with Pozzolith, cement dispersion. Why? Because (1) Pozzolith conforms with the water-cement ratio law on which ACI (613-44) and ASTM (C94-47T) methods for concrete design, specification and production are based (2) Pozzolith produces required concrete properties at lowest cost.

Write for complete information.

MASTER BUILDERS

CLEVELAND 3, OHIO — TORONTO, ONTARIO



Two of A. I. Savin Corporation's four 500′ Blue Brute Portable Air Compressors that are setting an example for dependable ser.ice

TOUGH GOING!... BUT BLUE BRUTES ARE TOUGHER!

On jobs like the Boston Post Road relocation project — with rock cuts containing 70,000 yds. in a single pocket — you soon find out what your air equipment can do!

A. I. Savin reports 100% satisfaction from Worthington Blue Brutes. It's easy to see why. Blue Brute 500′ Portable Air Compressors are packed with such advanced features as full force-feed lubrication and easy-breathing Feather* Valves—the most efficient ever made. No wonder these "portable powerhouses" have stood up under long, gruelling service without an extra minute down or an extra cent spent for repairs!

Also, Blue Brute UMW-40 Wagon Drills are the most versatile in the field . . . fast, powerful drilling machines that swing into action at any angle, to make short work of the toughest rock formation!

Adding up, here's a completely dependable air supply and air tools that make the most of it . . . a typical Blue Brute team that is beating schedules the country over. For further details that prove *there's more worth in Worthington,* see your nearby Blue Brute Distributor or write us direct.

*Reg. U. S. Pat. Off.

HB-8

HERE ARE THE FACTS

The A. I. Savin Corporation is using Worthington Blue Brutes to make a fast, economical job of one of the country's most difficult stretches of highway construction — 19,500 ft. straight through rocky, coastal Connecticut terrain on the relocated Boston Post Road.

Savin's Blue Brute 500′ Portable Air Compressors feed a battery of drills, wagon and hand-held. They have supplied air almost continuously for 5,000 hours at full rated capacity — without anything but routine, after-hours servicing!

The Blue Brute UMW-40 Wagon Drills on the project match this performance with consistent drilling through 22 ft. of mixed rock in 10 to 12 minutes!

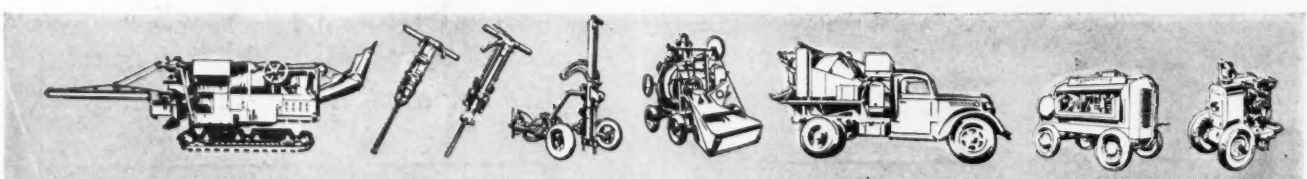
Making fast speed through mixed rock! One of A. I. Savin's UMW-40 Blue Brute Wagon Drills in action

WORTHINGTON

WORTHINGTON PUMP AND MACHINERY CORPORATION

Worthington-Ransome Construction Equipment Division, Holyoke, Mass.
Distributors In All Principal Cities

BUY BLUE BRUTES



IF IT'S A CONSTRUCTION JOB, IT'S A BLUE BRUTE JOB